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PLICATION OF THE ROUND AND ANTERIOR FOLD OF THE BROAD LIGAMENT ON THE ANTERIOR SURFACE OF THE UTERUS FOR RETRODISPLACEMENT *

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ANATOMIC AND SURGICAL PRINCIPLES

This presentation is made more to illustrate the anatomic and surgical principles underlying the entire subject of the treatment of retroversion, than to set forth any specific mechanical detail. The uterus is very largely an intra-abdominal organ. All intra-abdominal organs are supported almost entirely by peritoneal folds. The peritoneum is supported in turn by a loose connective tissue which holds it loosely but persistently to the abdominal wall except at its upper attachment, where it is firmly fixed and blended with the diaphragm. Strictly speaking, the abdominal organs, which we refer to as intraperitoneal, are all extraperitoneal, inasmuch as every organ lies between two layers of peritoneum made as if the organ had been pushed into the peritoneal sac from the outside, and had become adherent to it.

New ligaments are formed during fetal development and rotation, by the contact of two peritoneal surfaces which adhere, blend, and become obliterated at point of contact. This may be illustrated by the rotation of the colon, which goes upward and to the right and adheres to the peritoneum of the posterior abdominal wall and thereby forms the mesocolon. The spleen rotates to the left, comes in contact with the peritoneum of the posterior abdominal wall, adheres to it, obliterates the endothelial coverings and thereby the ligament of the spleen is formed and it is fixed on the left side. The omentum grows from the lower border of the stomach down over the transverse colon and adheres to it at the point of contact, its surfaces blend and we have the gastrocolic ligament or gastrocolic omentum. If the peritoneal surface of the stomach is plicated by bringing the anterior superior border and the anterior inferior border together and holding them firmly by peritoneal sutures, all of the space enclosed by this line of sutures becomes obliterated. If the omentum is sutured to the abdominal wall and held firmly, the surfaces blend and a complete partition is made across the abdomen. If the lesser omentum is plicated for a gastroptosis, Beyea has found that the surfaces blend and the omentum or ligament is permanently shortened.

The Kelley operation proves more conclusively than anything else the certainty of the blending of peritoneal surfaces, for we find that after Dr. Kelley's operation (which does not use one-twentieth the amount of peritoneum found supporting other organs of equal weight), in only a small percentage of cases does the uterus fall backward, and in nearly all of those cases in which the uterus does fall backward, the ligament is found, not broken, but attenuated to a thread. This operation has probably been done more times than any other intraperitoneal operation, with the exception of the removal of the appendix, tubes or ovaries; and with remarkable success when we consider that it first struck the vital point of treating displaced organs. Alexander unwittingly used the same principle in drawing out the round ligament and with its covering of peritoneum which blended at the internal ring, shortening the anterior fold of the broad ligament just so much as there was of peritoneum passing through the internal ring. The operation was later spoiled by meddlers who pushed the peritoneum back off the ligament, as a result of which the operation has fallen largely into disuse. The Gilliam, the Mann, the Simpson, the Baldy-Webster and all operations which are used to-day and have been found to be successful, use the peritoneum of the broad ligament; consequently I think the formulation of the following rule is justified: "Two peritoneal surfaces brought together and held firmly in an aseptic state, adhere; blend, and obliterate and the contiguous surfaces lose their endothelial covering, becoming continuous at the point of peritoneal contact."

The uterus, however, differs from the other peritoneal organs in that it is permitted a wider range of motion because of its functions; also, in that it is connected directly with the outside and therefore must be protected from extrusion. Because of the necessity for extraordinary mobility, the peritoneum of the broad ligament, the principal ligament, is attached extensively before and behind to the sides of the uterus and well down near its middle between fundus and cervix. Thus a very extensive attachment of peritoneum supports the uterus and, because of the large amount of loose connective tissue holding the peritoneum to the fixed wall of the pelvis, gives it a wide range of mobility. According to Nature's law of conservation, the uterus, which is so loosely attached, is turned in the pelvis, so that it lies practically crosswise.

Owing to the fact that such a variety of positions must be assumed, it becomes necessary to have some other means of automatically or involuntarily poising this organ and keeping it in this position at right angles to the body. Therefore the round ligament becomes a necessity, and is, histologically, perfectly constructed for such a function, as indicated by the following definition, taken from Sobotta:

* Read in a symposium in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixty-First Annual Session, held at St. Louis, June, 1910. Some articles of this symposium appear on later pages of this issue and others, with the discussion, will be printed next week.

In addition to the broad ligament, the uterus possesses other ligaments which are to be regarded as a continuation of its musculature. The most important of these is the round ligament, which is essentially a cylindrical or slightly flattened muscular cord, 12 to 15 cm. in length, which takes origin on either side from the anterior surface of the uterus in the vicinity of the uterine extremity of the tubes, and runs at first almost horizontally, then forward and downward between the two layers of the broad ligament covered mainly by the anterior one. In the vicinity of the uterus the ligament is thickened and consists solely of connective tissue and non-

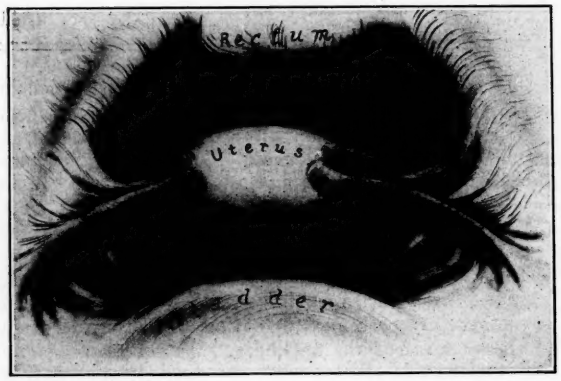

Fig. 1.—Relations in partial retrodisplacement of the uterus.

striated muscle but in its course through the inguinal canal it usually receives fasciculi of striated fibers from the internal oblique and transversalis which are continued on it for a varying distance, frequently extending almost to the uterus but never passing externally beyond the inguinal ring. He further says: "Similar continuations of the uterine musculature are the recto-uterine which run in peritoneal folds of the same name and connect the superficial musculature of the rectum with that of the uterus. The uterosacral ligaments are connective-tissue fasciculi which accompany the muscular similarly named folds to the region of the second and third sacral vertebræ where they fuse with the peritoneum.

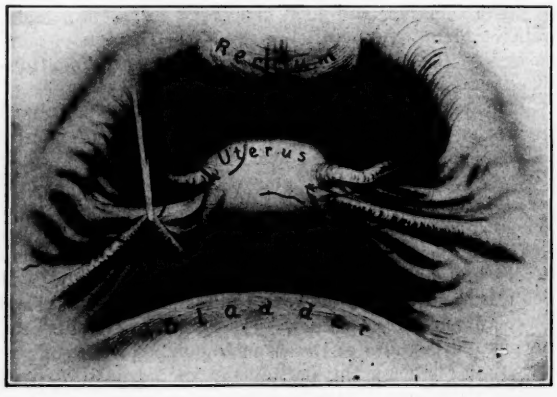

Fig. 3.—Second step in author's operation.

Taking up the physiology, we find that a muscle fiber has no other function than that of contraction and producing motion. We also know that a muscle fiber will under no circumstances stand a continuous strain, and that a muscle is therefore totally unfitted for taking up the work of a ligament proper; consequently, the only physiologic function for which the round ligament could be used would be for producing motion, aside from the function performed by the connective tissue, which is an extraordinary precaution to prevent the uterus from being extruded. It is therefore very evident that the function of the round ligament must be that of automatically poising the uterus during the various positions assumed by the individual and thus preventing it from becoming a dead weight on the broad ligament.

OPERATION

Following the early operations of double salpingectomy and oophorectomy, in which the broad ligament was tied

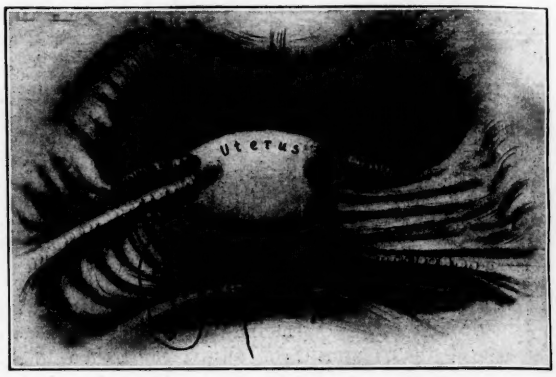

Fig. 2.—First step in author's round and broad ligament plication.

off *en masse,* and in which the round ligament was frequently included, a large percentage of the patients developed a retroversion. If one or both round ligaments are destroyed by traumatism, retroversion will usually take place later on; therefore it seems that the round ligament and the broad ligament are equally essential to the proper holding of the uterus in position —the broad ligament to carry the constant weight, the round ligament to poise it on this support in a manner making it easy to carry. Such being the case, the ideal operation for retrodisplacement of the uterus should shorten the broad ligament and at the same time avoid

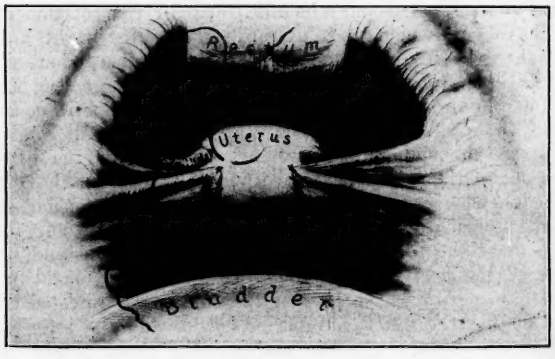

Fig. 4.—Third step in author's operation.

permantly fixing and thereby hampering the movements of the round ligament. Therefore I submit the following operation:

Before beginning the operation proper, break up adhesions, treat adnexa, lifting the uterus, and pack a sponge back of it which leaves it in the position shown in Figure 1. Then seize the round ligament about an inch and a half from the uterus, and with a No. 2 or No. 3 chromicized catgut, stitch to the anterolateral border of the uterus at the beginning of

the vesico-uterine fold. Place three or four similar sutures between this point and the uterine end of the ligament (Fig. 2). Thus a double fold of the broad ligament is brought over to the side of the uterus.

Seize the ligament an inch and a half further on and bring it up to a point just above and internal to the uterine end of the round ligament and fasten with a chromicized catgut suture. Place three or four more sutures between this and the first suture at the vesico-uterine fold (Fig. 3). Thus, two more peritoneal or broad ligament layers are brought over to the side and front of the uterus.

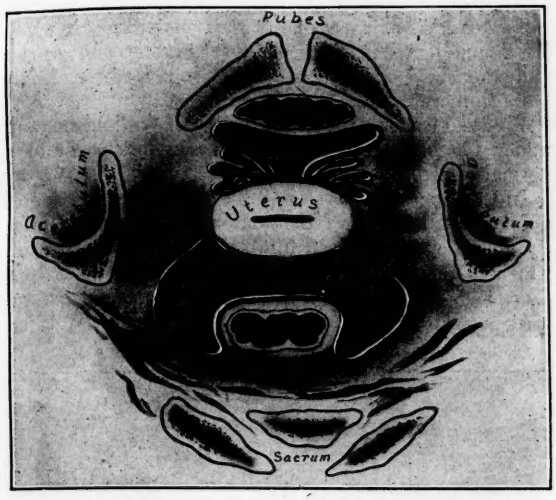

Fig. 5.—Sectional view, showing scheme of plication operation.

With a No. 1 or 2 chromicized catgut continuous suture, bring a fold of peritoneum from each side over the line of interrupted chromicized sutures. This continuous suture may include as much of the peritoneum as necessary to bring it taut; care must be made to avoid pulling in the bladder.

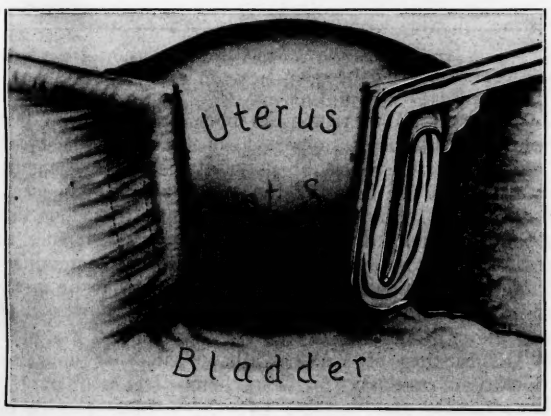

Fig. 7.—Scheme of second step of operation shown in perspective on the left and in sectional view of the right.

(Fig. 4). Be careful not to include the entire thickness of the round ligament in any of the rows of sutures.

I have personally performed 272 operations for retrodisplacements of the uterus by using this method. In twelve other cases continuous sutures were used all through, in an attempt to shorten the operation. After the twelve operations by the continuous method, four patients relapsed very soon and the other eight have not been heard from. After the 272 operations by the method described, using the interrupted sutures, I have heard of only two cases of recurrence; one after an operation for prolapsus in an old woman, another in which the operation was followed by volvulus, requiring a secondary operation and drainage. In fact, I have not examined these patients and do not know that recurrence has taken place. I have learned directly of eighteen women who have borne children since. In these, no dystocia has been noticed. I have personally examined

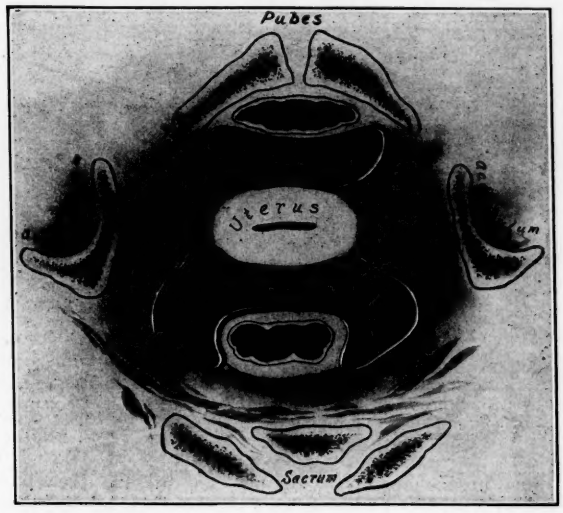

Fig. 6.—Sectional view, showing end-results of plication operation. Dotted lines represent obliterated peritoneal areas.

four of the eighteen after labor and found the uterus in good position. The other fourteen have been examined by the family physician and the uterus has been found in good position. Of the 272 patients five have

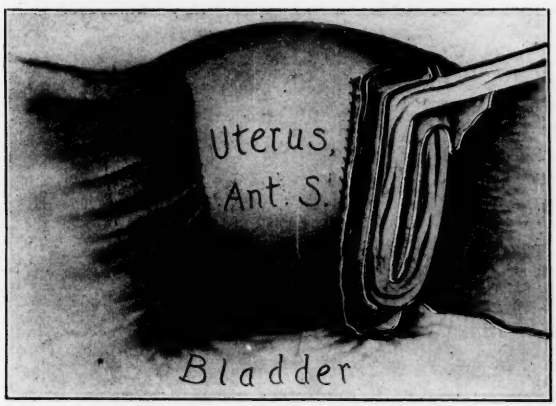

Fig. 8.—Scheme of third step shown in perspective on the left and sectional view on the right.

required a later operation for other diseased conditions in the lower abdomen, which has given an opportunity to observe the condition following the operation. In all five cases, the broad ligament was found holding the uterus in perfect position. The ligament was normal except that the anterior fold seemed slightly thicker. The round ligaments, one of which in all cases, and both of which in some cases, had been attenuated to the size of a very small cord, had regained their normal size

and their normal position under the peritoneum and, in fact, had reestablished relations that were normal in every respect. Therefore I feel justified in presenting Figures 7 to 11 to illustrate the manner in which the round ligament unquestionably restores itself to its normal condition. I may here state that this is easily proved by making a cloth uterus and broad ligaments in which a round ligament made of an elastic cord is placed. By folding the round ligament and the broad ligament on the surface of the cloth uterus, as I have

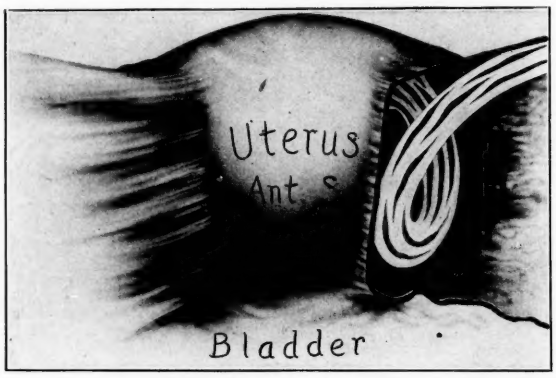

Fig. 9.—Round ligament freeing itself and straightening under the peritoneum.

done in the operation, taking care to glue the cloth broad ligament to the surface of the cloth uterus, thus corresponding to the blending of the peritoneum; by using sutures which can be either withdrawn or cut, in order to free the elastic cord, it will be found that the cord will slip out from between the layers of the cloth broad ligament, producing exactly the same condition I have found in my cases, minus the blending of the

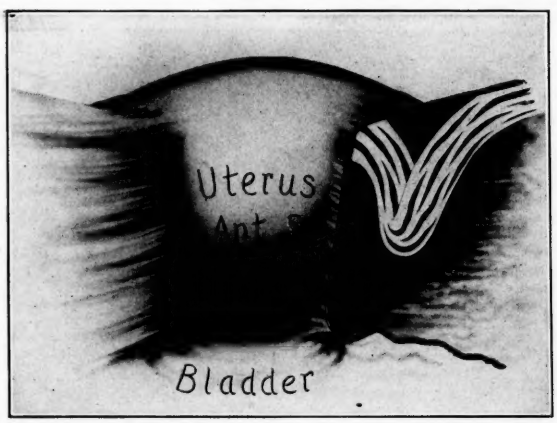

Fig. 10.—Final step; round ligament straightening itself under the peritoneum of the round ligament.

adjacent peritoneal surfaces which obliterates all peritoneal spaces.

Figure 7 shows the second step of the operation in perspective on one side and a sectional view of the same step of the operation on the other side. In the sectional view, representing the round ligament as being very much attenuated, the muscle cells are few.

Figure 8 shows the completed operation in perspective on one side and a sectional view of the completed operation on the other side with the same attenuated ligaments.

Figure 9 shows a broad ligament some weeks after operation on one side, and on the other side, the theory of the gradual freeing of the round ligament under the broad ligament as represented. The round ligament has had time to rest, the catgut sutures have been partially absorbed, the muscle fibers, performing their normal function of contraction, are coming closer together, thereby straightening the ligament out under the peritoneum.

Figure 10 is an extension of the same process, in which the round ligament is becoming straighter and shorter and the muscle fibers are becoming correspondingly more numerous.

Figure 11 shows the round ligament straightened out under the broad ligament and the establishment of a normal cord:

In this operation, as proved by results seen afterward, all the requirements of the anatomic and surgical principles set forth have been fulfilled. The broad ligament, which is the principal support of the uterus, has been shortened, and the action of the round ligament has not been permanently hampered but on the contrary, it has

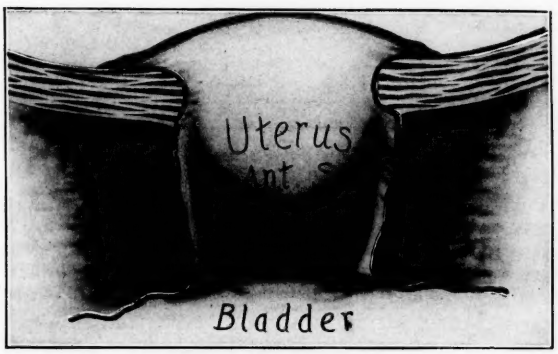

Fig. 11.—Round ligament restored to normal position under the peritoneum.

been permitted to regain its normal strength so that while the uterus is supported constantly by the broad ligament, it may also be poised to suit the changing positions of the body by the restored round ligament.

Dr. W. B. Holden, my office neighbor, has done this operation more than 50 times without recurrence as far as he knows, and states, in a personal communication that the results are so satisfying that he never thinks of doing any other operation for retroversion of the uterus.

Dr. Suttner of Walla Walla, Wash., has done the operation regularly for some time (more than 150 operations), and patients have been pleased with it. The observations of all these operators, taken with my own, seem to indicate that the comfort to the patient is greater in this operation than in any other operation having the same object. The absence of the backache, which is represented as following operations which permanently fix the round ligament, is a very noticeable feature. Previous to the development of this operation, I had done approximately 200 Kelley operations with very good success as far as holding is concerned. The anatomic condition left after the operation was unsatisfactory in a considerable number of cases. Labor was difficult in a proportion of the patients.

In some cases habitual abortion occurred and a very large percentage of the patients complained of the old backaches, pulling on the abdomen, and a train of nervous symptoms which were even worse than the original. I may here state that I followed Suttner's lead in performing the plication operation in cases in which the uterus was already pregnant. Suttner deliberately did this plication operation in two cases at the second month of pregnancy in order to prevent abortion, which had previously been habitual about the third month as a result of the displaced uterus. In each instance, the child went on to full term and was born without difficulty. In one of my cases the patient was pregnant at the time of operation but did not know it. She went on to full term and was delivered. In another case, the patient, an unmarried woman, was found to be pregnant two months. The plication operation was done regardless of the condition. The wedding ceremony was performed the night after the operation. Pregnancy went on to full term and the child is now several months old. I presume that these pregnancies would continue with any of the other round ligament operations in just the same way, but I mention these cases to show that while this operation seems to comprise a good deal of surgery the traumatism must necessarily be of a superficial nature.

Corbett Building.

THE RELATION OF THE TEETH TO THE DEVELOPMENT OF THE JAWS AND FACE *

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In considering the structure of all multicellular organisms, and, in fact, in the very simplest aggregations of cells into tissues, it becomes apparent that there are two essential parts: the cells, which are the vital units; and intercellular substances, which give the physical characteristics to the tissue. The latter are always material which have been produced by the vital activity of the protoplasm, but which are not living matter; that is, they have no vital properties but are dependent on the protoplasm for formation and for the maintenance of their chemical character. In tissues, the vital characteristics are given to the protoplasm by the cells, the physical characteristics by the intercellular substance. Protoplasm, which has long since been recognized as the physical basis of life, is always of a soft and more or less gelatinous character, and of it alone, nothing resembling a highly organized creature could be formed. Other substances therefore have been produced by the protoplasm for the purposes of protection, support, rigidity and strength. Always the protoplasm is the active agent by whose chemical activity the protecting or supporting substance is formed. There are two types of formation. The first consists of cells which develop substances inside of the protoplasm to give rigidity or strength This class is illustrated by certain cells found in the lobster and other similar creatures, but this type of supporting cell has apparently proved insufficient or not adapted to higher developed forms. In the other type the protoplasm develops, on its surface or about it, formed materials which give protection and support, either in the form of rigidity, or strength, or both. The simplest example of this class is found in the cell walls of plants.

It is important to note that the necessity for physical properties which are impossible for protoplasm itself is the cause of the appearance of intercellular substances.

In the very beginning of evolution, therefore, physical conditions and necessities led to the formation of substances by the protoplasm which gave it support and protection. In the higher animals certain tissues have developed such materials for the support and assistance of the more vitally active tissue, and therefore have been called the supporting or connective tissues. In these tissues the cells form and maintain materials which give qualities of strength and rigidity to the tissue and enable it to serve as the framework of the organism. The intercellular substances have been called into existence to meet physical and mechanical conditions. The connective tissues are the most adaptable of all tissues and respond most quickly to conditions of environment. The mutation of these tissues or their power to change from one variety to another is their most striking characteristic. The cells control the intercellular substances to form more, to destroy what has been formed, or to change its character; and their activities are excited in response to physical or mechanical conditions.

In the process of growth and function they are continually changing. Embryonal connective tissue develops into fibrous tissue, fibrous tissue into cartilage, and cartilage into bone. In bone, which is the highest form of tissue for rigidity, mutation is the most striking characteristic. It may be formed from fibrous tissue directly or through the medium of cartilage, and it always retains a large amount of cellular elements which can at any time destroy and reform the intercellular substances. In fact, bone should always be considered as a fibrous tissue which has developed in itself intercellular substances of a different sort to meet special mechanical conditions. In other words, there is always in contact with the calcified intercellular substance of bone, on its surface and in spaces within it, undifferentiated connective tissue, the cells of which are capable of developing into any sort of connective tissue cells. It is the presence of these embryonal cells which makes bone a plastic tissue. There are three varieties of bone: subperiosteal, Haversian system, and cancelous. In other papers I have emphasized the characteristics of these classes, and I assume that all are familiar with the minute structure of each. At present I wish to emphasize the transformation from one variety to another that occur in growth and which are in fact going on continually throughout life under the influence of mechanical conditions.

In bone showing subperiosteal bone on the surface, a portion of compact or Haversian system bone, and cancelous bone beyond, if this bone is growing in one direction subperiosteal bone will be laid down in layers parallel with the surface. When a certain thickness has been formed large spaces or canals will be absorbed out of it, forming what are known as Haversian spaces and around these concentric layers will be laid down, converting them into Haversian systems. Only enough compact bone is formed to meet the mechanical stress of the position. As soon as an excess has been formed absorption begins in the Haversian canals, cutting out large spaces around which a few lamellæ are formed, producing cancelous bone. If the bone is growing in the opposite direction concentric layers will be laid down around the spaces of the cancelous bone, making it more compact and large absorptions will occur under the periosteum, cutting deep into the Haversian system bone, after which a few layers of subperiosteal bone will be

* Read in the Section on Stomatology of the American Medical Association, Sixty-First Annual Session, at St. Louis, June, 1910.

added to the surface. In such absorptions the entire surface is not attacked at one time, but in one area there will be a large absorption while in an adjoining there is a slight rebuilding.

Figure 1 illustrates the first type. It is a section of the buccal cortical plate of the mandible of a sheep. On the surface is shown a little subperiosteal bone in which only one or two Haversian systems have been formed. Next is seen the Haversian system bone which has been destroyed from within and rebuilt with bone of more open structure. The first type of growth occurs in the direction toward which force is being exerted; the second type occurs on the surface from which force is being exerted. It may be stated as a generalization that the bone is more dense, but less in amount on the side

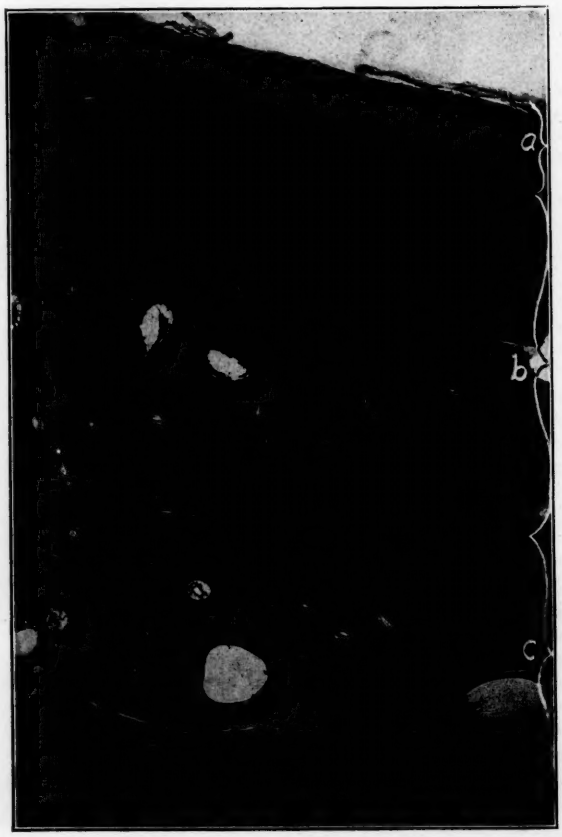

Fig. 1.—Buccal cortical plate of mandible of sheep; a, subperiosteal bone; b, Haversian system bone; c, rebuilt bone of more cancelous character.

toward which force is exerted, and greater in amount, but less dense on the side from which force is exerted. These generalizations become important in orthodontia. These conditions are illustrated in Figures 2 and 3. Growth has been progressing toward the buccal side. In other words that is the direction toward which force has been exerted, and the compact bone is less in amount, more dense in structure, while on the lingual side it is greater in amount but less dense in structure.

Professor Cope, in a long article,[1] elaborates the idea that the bones have developed in response to mechanical conditions, that the form, size and structure are the expression of adaptation to mechanical environment. He treats the subject entirely from the evolutionary standpoint. If we consider the subject from the standpoint of the development of the individual we are led to similar conclusions, and become more and more impressed with the fact that bone is formed in response to mechanical stimuli. This is true of the bone as an organ, and equally true of the minute structure within it.

Fig. 2.—Transverse section through the alveolar process and the roots of the first and second bicuspids and first molar teeth; the buccal plate above the lingual plate below; the alveolus of the first bicuspid, to the right, empty.

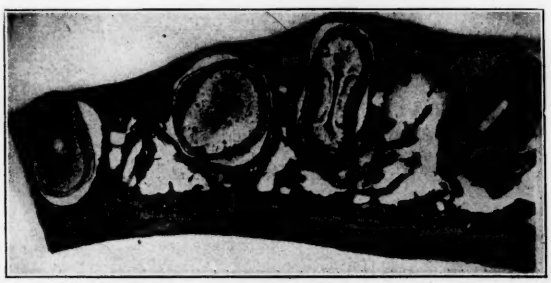

Fig. 3.—Transverse section deeper in the process; the buccal plate above, the lingual plate below, the first bicuspid to the left.

Fig. 4.—Section of human mandible between second and third molars.

Some years ago, Walkoff, in an elaborate study of the jaws by radiographs, showed that the direction and character of the spicules of cancelous bone within the substance of the bone are not the result of chance, but that their direction and arrangement were determined by the forces to which the compact bone of the cortical plates was subjected. If we examine sections of the mandible we shall find that not only is its general form determined by the mechanical conditions to which it has been subjected, but the cancelous bone is being continually reformed to adjust it to the stresses received on its surfaces.

Figure 4 is a decalcified section of a human mandible which was made to study the arrangement of the lamellæ as a record of the growth of bone. The subperiosteal layers are very few at almost all parts of the section. The cancelous bone in the alveolar region has been built and rebuilt to support the cribriform plates forming the

1. Cope, E. D.: The Mechanical Causes of the Development of the Hard Parts of the Mammalia, Jour. Morphol., 1888, iii.

walls of the alveoli for the roots of the molars during their movements in development, and the record of this rebuilding is left in the arrangement of the lamellæ.

Figure 5 shows a field from position 1, Figure 4. Notice how plates have been cut off and built on with layers in a new direction and how additions have been made at different times.

Figure 6 is taken from position 2, Figure 4. These spicules are a regular patchwork. At *a* is a bit of old spicule which ran in an entirely different direction, and there is another at *b*. These changes have not been the result of chance, but each new formation has been the response to some mechanical stimulus received through the substance of the bone.

Figure 7 is from 3, Figure 4, and shows the rebuilding that occurs during growth. There are large areas showing lamellæ which were at one time parallel with the surface in which comparatively few Haversian systems have been formed. This was probably during the most

Fig. 5.—Cancelous bone from 1 in Figure 4, showing the rebuilding of the spicules and addition of layers at different times.

active period of growth, the later subperiosteal layers being much more completely replaced by Haversian systems.

Figure 8, a field at 4 of Figure 4, shows wonderfully well the outline of the absorption spaces that have been rebuilt and at several places on the surface the marks of removal of bone by the periosteum, and in one or two places slight rebuildings.

In the growth of the jaws, therefore, bone is formed on the surface by the periosteum, the peridental membranes, and the articular cartilage, and is absorbed and rebuilt within, adapting it to all of its mechanical influences. We may say, therefore, that the adult bones are the result of all the mechanical conditions to which they have been subjected.

It would be impossible within the limits of this paper to consider in detail all of the forces which exert mechanical influences on the jaws. Probably the first and most important is the force exerted by the growth of organs enclosed in, or surrounded by the bones. This includes the growth of the tongue and the muscles surrounded by the jaws, and the muscles which lie against their surfaces, but more important, the growth of the teeth which are enclosed in the substance of the bone. Not much is known about the nature or the amount of the force generated by the growth or multiplication of cells. More has been done in regard to the growth

Fig. 6.—Cancelous bone from 2 of Figure 4; *a* and *b*, bits of old spicules.

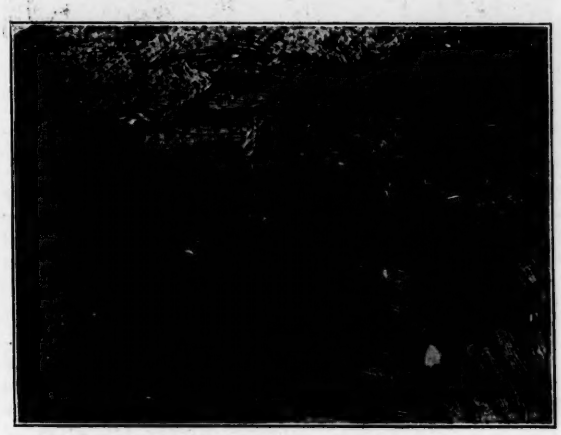

Fig. 7.—Compact bone from 3 of Figure 4, showing formation of Haversian systems in old subperiosteal bone.

of plant than animal cells but our knowledge is very meager. The force is probably very considerable, but acting through very small space. The growing roots of plants move stones, and some experiments have been made to determine the weight that could be lifted by the growth of a rootlet. The phenomena of osmotic pressure are involved in the problem and this involves the question of blood-pressure. There are some analogies

between the force exerted by the growth of protoplasm and that generated by the expansion of wood fiber, by the absorption of water, but the whole subject is too deeply complicated for any such superficial analysis. Whatever may be the explanation, the growth and the multiplication of cells produces very considerable force; and the growth of the teeth within the substance of the jaw produces mechanical conditions which are very important in the development of the bones of the face.

In a paper recently read before the Illinois State Dental Society I presented a more elaborate analysis of this topic, only the more important phases of which can be given here. While the temporary teeth are erupting they are continually being carried occlusally by the growth of their roots, the alveolar process growing up around them. As the roots of the anterior teeth are completed, they are still pushed forward, upward and outward, by the development of those distal to them. As soon as the temporary dentition is complete, the temporary teeth—alveolar process and all—are forced to move, by the development of the permanent teeth, which lie in crypts below them. In the paper referred to, the relation of these crypts to the roots of the temporary teeth was examined in detail; here it is sufficient to say that the growth of the permanent incisors and cuspids

Fig. 8.—Compact bone from 4 of Figure 4; *a*, a rebuilt portion.

first causes the development between the median line and the region of the mental foramen and later the development of the bicuspids and second and third molars cause the growth which increases the distance from the mental foramen to the ramus. The development of the long roots of these teeth will carry the temporary teeth, alveolar process and all, downward, forward and outward in the upper jaw, upward, forward and outward in the lower. If we examine sections of the alveolar process about the temporary teeth we shall see that this growth is accomplished by the formation of subperiosteal bone on the outer and inner surfaces, and subperidental bone at the margin of the process and around the alveolar.

In the production of the alveolar process the peridental membrane and the periosteum work together. As soon as a certain amount of solid layers have been formed, large absorptions occur, which are partly rebuilt by concentric or Haversian system lamellæ, which may be again partly rebuilt and destroyed. The important factor is that the teeth are moving in an occlusal direction and the bone is being built and rebuilt under the influence of the mechanical conditions, so that at the later stages of their use the bone of the temporary alveolar process shows an immense number of formations at different periods. The growth of the permanent tooth does not cause absorptions simply of the bone forming the immediate wall of its crypt but osteoclasts appear all through the bone enlarging the spaces and opening up the structure. Apparently the bone is weakened in this way until what is left can spring under the force and then a new formation is begun to strengthen the tissue.

I have been especially impressed with the way the force exerted by the growth of the teeth in the crypt is responded to all through the substance of the bone covering them or in fact throughout the jaw. The result of these tissue changes is that when the temporary teeth are finally pushed off there is only a remnant of the temporary alveolar process left, and to this additions are at once started to attach the erupting permanent tooth. The influence of the growth of unerupted teeth continues to cause growth of bone and movements of the previously erupted teeth until the third molars have taken their places. During all of this period the action of muscles has been reacting on the bone. First, the muscles of mastication attached to the ramus and the coronoid process rest against the digastrics, geniohyoids and geniohyoglossi attached to the anterior part, the teeth and especially the first molars acting as the fulcrum. It is apparent, therefore, that if the first molars are in abnormal relation the position of the fulcrum is shifted, and the balance of the forces is disturbed, and it is very apparent that if the lower first molars are mesial of their normal relation the result is an overdevelopment of the mandible; if they are distal there is an underdevelopment. This is the necessary result of the changed distribution of forces in response to which bone is formed.

The effect of the function of swallowing, I believe, has not been appreciated. Every normal person swallows about once every two minutes. In each set of muscular contractions which constitute the act there is a distinct and considerable thrust against the lingual surfaces of the bones and the teeth. Every thrust is a stimulus to the connective tissue cells. The mouth if normally closed is entirely occupied by the tongue, and the base of the tongue is held against the palate and the pillars of the fauces in such a way that a partial vacuum is produced, which assists in the support of the weight of the mandible. This constitutes a mechanical impulse to the growth of bone which is very important in lowering the roof of the mouth and consequently increasing the depth of the nasal cavity from above downward.

The normal action of the lips and cheeks is a most important factor, as we are reminded by the disturbance of growth caused by abnormal function of these muscles. Finally, to sum up the entire matter, I have endeavored to show that both phylogenetically and ontogenetically, bone is produced in response to mechanical stimuli; that in bone formation living cells produce formed material to give strength and that the vital activity of these cells is excited in response to mechanical influences. We have examined some of the many sources of force or energy which affect the vital activity of the cells, and as a result of these considerations we may say that the adult bones are the result of all the forces exerted on them and distributed through their substance by the occlusion of the teeth. If the occlusion is normal the forces are perfectly balanced, and a harmonious and symmetrical development is the result. In proportion

as the occlusion deviates from the normal there is a disturbance of the harmony of development. The preservation of normal occlusion is necessary therefore not only for the proper mastication of food, but for the proper development of the face and proper function of respiration and swallowing.

ABSTRACT OF DISCUSSION

DR. M. H. FLETCHER, Cincinnati: I have done some of this class of work, and I have derived an enormous amount of pleasure and profit out of it. Those who have tried to do work of this character know that it entails an enormous amount of labor. A filling which may be too high, or the moving of teeth, or the treatment of the diseases of the sockets, and in fact almost everything we do in the matter of treatment of live tissue, brings these laws into play. I have been especially interested lately in the growth and repair of the cementum, and in several places Dr. Noyes has shown features that are especially instructive to me. I should like to see specimens more in detail as to the growth of cementum—where it begins and where it ends. The tissues lying about the roots of the teeth are subject to disease and repair to a marked degree, and we must understand these laws that we may intelligently treat diseases of the bones and teeth.

DR. B. E. LISCHER, St. Louis: I yield to none in my appreciation of the valuable contribution to dental science which Dr. Noyes has given us. I question one point, however, on which he laid much stress while explaining some of the slides on the screen. I refer to the theory of the elongation of roots and their probable rôle as a mechanical factor in the dentitional process. It was advocated many years ago by Wedl and since found wanting. Other theories proposed as a plausible explanation of the mechanism of eruption are the pressure theory (pressure of succedaneous teeth), the alveolar theory of Albrecht, the granular theory of Baume, the pulp theory of Wallisch, the functional theory of Robin and the blood-pressure theory of Constant, also as modified by Tomes. The latter is the only accepted one. The objections to the theory of the elongation of roots are as follows: (a) many impacted teeth with fully developed roots never erupt; (b) in the crocodile the developing teeth travel sideways for a considerable distance at right angles to the long axes of the roots; (c) most teeth in the course of eruption travel a greater distance that the entire length of their root or roots; (d) many teeth are erupted before their roots are fully formed.

DR. STEWART L. MCCURDY, Pittsburg: These hypertrophies of bone come from inflammatory conditions, from irritation, or from the projection of bone into the tissues or into the muscles following accident. The presence of syphilis stimulates not only hyperostosis but also endosteitis, and in addition the growth of the entire shaft of the bone, the entire bone becomes involved. Then in another instance diminished growth of the shaft occurs, as in achondroplasia, yet the epiphyses grow just as though the shaft were normal. In other words, the epiphyses are supplied by blood-vessels from entirely different sources than the shaft. Again, there may be hyperostosis of the epiphysis of a long bone, the shaft remaining perfectly normal. This entire subject of growth and development of bone is much clearer in my mind since I have heard Dr. Noyes' paper. The architecture and the reconstruction of the bone bring to my mind most strongly the law of conservation. As nearly as I can repeat that law, it is: Bone is deposited in the various parts of the body as it is needed; then Nature immediately begins to reconstruct that bone, and when it is not needed absorption takes place to diminish the bone to the normal size to perform its function. This is Wolf's law.

DR. EUGENE S. TALBOT, Chicago: I think that Dr. Noyes has demonstrated that these forms of absorption are due to irritation. The point which Dr. Lischer makes is rather in Dr. Noyes' favor. All these conditions he mentions act as stimulants to bone development and assist in bone absorption and regeneration. In animals, the animal is either losing the function of bone, or he is developing rudimentary structures, so that cannot be considered here. Dr. Noyes has shown absorption due to irritation. There are, however, two points on which he did not touch, and which Dr. McCurdy mentioned in regard to the bone development and absorption, and that is the nervous system. In the case of arrest of development we have arrest in ontogeny, due either to some condition *in utero* or to disease, such as scarlet fever, pneumonia, or any other constitutional disease early in life. On the other hand, large jaws, those measuring 2½ inches in diameter, are due to want of resistance in phylogeny; in other words, arrest of development in phylogeny from the lower animals, such as the anthropoid apes, etc. In that case the large developed bones take the line at least resistance toward the lower vertebrates.

DR. M. H. FLETCHER, Cincinnati: I did not discuss the idea of pressure in the eruption of teeth or any other force, because I leave that just as I leave the differentiation of cell life in any other part of the body. If anyone can tell why a blade of grass grows, or why union of the male and female cell finally produces the epiblast, the mesoblast and the hypoblast, or why the presence of the dentin against the periosteum of the dental follicle induces a layer of cells which produces cementum then I think we are near to answering these questions. The practical feature I get from this is that under certain conditions Nature will reproduce certain tissue, and that in order to reproduce the new she must first carry away the old. Now it seems more important for us to know in what condition to put tissues in order to have repair, when there is broken-down tissue from disease, and the presentation of Dr. Noyes is a beautiful display of these laws.

DR. FREDERICK NOYES, Chicago: I did not emphasize the elongations of the roots alone, and I did not emphasize the succedaneous teeth alone, or any one thing alone, but what I did try to state was that connective tissues are tissues of environment, and that they respond to mechanical stimuli, and that the elongation of the root necessarily produces a mechanical stimulus. It cannot help it. Consider for a moment the form of the root, the relation to the surrounding tissues and the fact that there is multiplication of cells in that space which produces force. So long as the root continues to grow it must exert a mechanical influence. The objections cited were that action and reaction are equally opposed in direction and if the resistance above the tooth is greater than the resistance at the apex, the apex will move and not the crown. I emphasized the fact that in the development of the tooth the floor of the crypt was pushed through the cancellous bone and did not react on the plate above until it reached the cortical plate at the lower border of the jaw, and the resistance was greater below than above and then the other end had to move.

Dr. McCurdy brought out several things which I could not go into, and, in particular, the idea that with mechanical stimulus without nourishment, growth is impossible. There may be mechanical stimulus, but if the blood-supply be cut off there can not be growth. I did not mention this because it is an inhibiting factor, not a developing factor. It is an important factor in the discussion, however.

Dr. Talbot referred to the influence of the nervous system, and that is a field which has important bearings in this connection. The point cited by Dr. McCurdy, that we would have changes throughout the substance of the bone beyond the region of the inflammation, indicates a nerve connection between the two, which, when a growth is set up in this position in response to mechanical stimulus, continues its action in a field beyond. In the same way, an irritation of one tooth may cause development of dentin within the pulp chambers of all the teeth within the same nerve-supply.

The most important thing which I wanted to bring out was that from a phylogenetic standpoint, from the beginning of evolution apparently connective tissues respond to mechanical conditions. Dr. Brooks stated as the greatest characteristic of life, the ability of adaptation to environment, and the characteristic of the connective tissue cell is to adapt itself to mechanical conditions. Following that idea through, we find that it is the mechanical influence to which the vital activity of the connective tissue cell responds with the changes in the structure of the tissue both in reconstruction and in production.

ELECTRIC ANALGESIA, AND ELECTRIC RESUSCITATION AFTER HEART FAILURE UNDER CHLOROFORM OR ELECTROCUTION*

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Electric analgesia was applied successfully for the first time, in animal, then in human surgery, by myself. Successful local application of this analgesia in human surgery is reported by Dr. M. M. Johnson.[1] I administered this analgesia. I have reported successful application of this analgesia in animal surgery and electric sleep in clinical work in all the issues of the *Journal of Mental Pathology*, commencing with 1906. The part of this paper treating of electric analgesia and sleep will be published elsewhere for reason of want of space here.

Fig. 1.—Author's model of wheel interrupter with fixed period of passage of current.

It is possible to resuscitate, by means of electric currents, subjects in a condition of apparent death caused by chloroform, ether, morphin, electrocution, etc. The first important researches into resuscitation of electrocuted subjects were made at about the same time by Professor Battelli[2] in Europe, and Dr. R. H. Cunningham, in this country.[3] Both authors used enormous currents for causing single electric shocks with which they attempted to restore life after ventricular tremulation had set in. Professor Battelli used 4,800 and 2,400 volts respectively, of alternating currents (amperage not stated). The means was not practical because one shock caused with such high voltage was all the heart could stand; a second shock killed the animal definitely, if it was not already dead.

Professors Ledue and Rouixeau[4] tried to resuscitate animals by means of direct interrupted currents of low tension, but they committed their predecessors' error of including the animal's head in the circuit. Besides, they used the lethal current for producing the shocks. The method was useless in cases of dogs.

While experimenting on the cerebral circulation during electric epilepsy[5] I saw, through a trephined opening in the skull, that every electric shock caused profound anemia of the brain at the time of the closure of the circuit. This led me to exclude the animal's head from the circuit during the rhythmic excitations, in order to exclude the medulla oblongata with the cardiac and respiratory centers and avoid any further anemia of these centers during apparent death, while the electric rhythmic excitations were being practiced. I also reduced the current to minimal doses for the first rhythmic excitations, because I found that useful cardiac and respiratory excitability was rapidly exhausted within the few minutes of apparent death. The maximum potential at the end of the resuscitation did not exceed

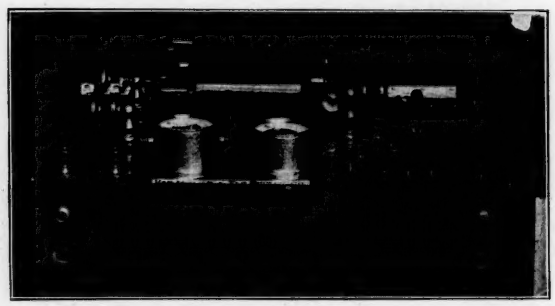

Fig. 2.—Author's triple interrupter of direct currents (20,000 to 40,000 interruptions). For resuscitation in ambulance service.

120 volts. Even this is too high voltage: in dogs it causes marked vagus stimulation so that the heart beats are very slow during a long period of time after resuscitation; and the wave form of the beat does not resemble the normal form. In ordinary severe cases, 70 volts is a good maximum potential.[6]

The method of resuscitation consists in causing artificial blood-pressure and respirations by means of rhythmic electric excitations, until normal function is restored. My choice electric current is the one I use for causing electric sleep and analgesia: a direct current, inter-

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

1. Johnson, M. M.: The Med. Rec., April 23, 1910.
2. Battelli, F., and Prevost, J. L.: La mort par les courants électriques: courant alternatif à bas voltage et à haute tension, Jour. de physiol. et de path. gén., May, 1899.
3. Cunningham, R. H.: The Cause of Death from Industrial Electric Currents, New York Med. Jour., 1899, lxx.
4. Quoted by Robinovitch, Louise G., in Sommeil électrique épilepsie électrique et électrocution. Thèse, Paris, 1906.
5. Robinovitch, Louise G.: General and Cerebral Blood-Pressure During an Attack of Electric Epilepsy, Jour. of Ment. Path., 1907, viii, No. 3.
6. Robinovitch, Louise G.: Method of Resuscitating Animals in a Condition of Cardiac and Respiratory Syncope Caused by Chloroform, Jour. Ment. Path., 1907; viii, No. 3. Method of Resuscitating Electrocuted Animals, Ibid; Méthode de rappel à la vie des animaux en syncope chloroformique et des animaux en mort apparente causée par l'électrocution. Effets différents de différents courants électriques Importance d'exclusion du circuit électrique de la tête de l'animal pendant les excitations rythmiques. Compt. rend. Soc. de biol., Feb. 1, 1908; De l'emploi des courants électriques pour le rappel à la vie, dans les cas de mort apparente causée par le chloroforme ou par l'électrocution. Nécessité d'exclure du circuit la tête, pendant les excitations rythmiques. Expériences pratiquées sur le chien. Application clinque, Bull. Soc. clin. de méd. ment., November, 1908; Resuscitation of Subjects in a Condition of Apparent Death, etc., Jour. Ment. Path., 1909, viii, No. 4.

rupted from 6,000 to 8,000 times per minute, period 1/10. Next in value is a direct current interrupted from 25,000 to 40,000 times per minute with my triple interrupter.[7] The last choice, and the one that I do not recommend if the first two can be had, is an induction current obtained with my special model of induction coil, an ordinary Dubois-Reymond coil, the special feature of which is the diameter of the wire of the coil, 1.2 mm. for the primary and 0.6 mm. for the secondary coil.[8] In cases of grave forms of apparent death, currents supplied by coils with fine wire will kill the animal, if it is not already dead.[9] Induction currents are alternating currents, the wave form of the current running above and below the base line. The physiologic effects of anodal and cathodal stimulations are distinctly different; the anodal stimulations are particularly dangerous in pulmonary and cardiac area when the current is obtained from a secondary coil, the wire of which is finer than 0.6 mm. Alternating and direct currents are deadly to cellular life, especially during apparent death.[10] But if nothing else can be had, rhythmic excitations may be practiced with these currents, rather than make no attempt to save life.

PROCEDURE

The dog's back is shaven in two places—on the back of the chest covering the pulmonary area and over the loins. The negative electrode is applied under the chest, the upper border reaching to the root of the neck. It is dangerous to use the positive pole under the chest. The positive electrode is applied over the loins. The electrodes measure 12 by 25 cm. for dogs of large size. They are made of zinc and are covered with a thick layer of absorbent cotton wet in a salt solution, 7 per 1,000. In man the chest electrode measures 25 by 30 cm.

Chloroforming is performed intensively, admitting little or no air and causing arrest of respiration and heart beats as quickly as possible. When breathing is no longer registered by the pneumograph and the manometer does not register any blood-pressure, the chloroforming is discontinued at once. An assistant catches hold of the animal's tongue with a tongue forceps, cleanses the mouth of mucus and pulls the tongue outward to allow free access of air during the rhythmic excitations.

The instrumentation with the preferred current is the same as that used for electric sleep. The operator now opens the switch of the cathode line, turns on a current of some 20 to 25 volts by means of the potentiameter. The circuit is then closed by means of the switch during a period of a fraction of a second. A deep inspiratory movement takes place. The mouth opens, the flabby, lifeless tongue that was lying on the roof of the mouth (the animal is on its back) contracts and is drawn inward; the fore paws are thrust upward with marked force; the posterior limbs are extended; the diaphragm is pushed downward and all the respiratory muscles enter into play. The chest is fully expanded and the pneumograph registers an ample artificial inspiration. The manometer may also register an artificial blood-pressure; but in cases of severe cardiac syncope the first few rhythmic excitations cause respiratory reaction without artificial blood-pressure. The operator breaks the circuit by opening the switch. This is followed by a deep expiratory movement, and all the muscles that entered into play to cause the artificial inspiration are now again flabby and lifeless; the expanded chest collapses and the pneumograph registers an ample expiration; the anterior paws fall one on each side of the body, the tongue falls to the roof of the mouth, lifeless, the mouth closes and the whole body is again lifeless and relaxed. The switch is kept open for a period of from one-half to one second, according to the gravity of the case. If the first voltage used caused an ample respiratory reaction and the manometer showed a momentary rise of blood-pressure, the succeeding rhythmic excitation is caused with the same voltage, but as a general rule it is necessary to increase the current to 30 volts or more; the excitations are now practiced with the increased current, the aim being to obtain ample respiratory reaction and blood-pressure with this minimal voltage within the shortest possible time, because useful cardiac excitability is quickly exhausted during apparent death. It is generally necessary to increase the current to 35, 40, 50, 60 and 70 volts within the course of three or more minutes of apparent death; the excitations are being practiced while the voltage is being increased. In favorable cases ample respiratory reaction and artificial blood-pressure are soon established, then accompanied by feeble spontaneous respiratory and cardiac reactions; these soon increase in amplitude; they are alternated with ample artificial reactions if necessary, taking care not to encroach on the spontaneous heart-beats and respirations, but rather precede or follow them. The operator judges by the spontaneous cardiac and respiratory reactions when it is advisable to discontinue the rhythmic excitations. If they are discontinued too soon death may set in after resuscitation, because in chloroform poisoning the blood is asphyxiated, dark; the feeble respirations and heart-beats may not be sufficient to cause useful oxygenation of the blood. But once ample spontaneous reactions are established the carotid artery is tied, the wound closed and the animal lives without showing any ill effects. I have kept such dogs during a period of one year and longer after resuscitation; they were in excellent condition.

LIMITATIONS

The period of apparent death is short; four minutes (including the time of the rhythmic excitations) is a long time, and five minutes is an exceedingly long period. But once resuscitated, the animal lives and shows no after-effects.

In chloroform poisoning death may take place in various ways: by respiratory arrest and final cardiac failure. This is the usual form; by primary cardiac failure;[11] this is a rare form in dogs, but quite familiar to surgeons in human beings, by simultaneous cardiac and respiratory arrest. In the majority of cases death sets in by respiratory paralysis, followed by cardiac failure. The accompanying tracing (Fig. 3) shows the usual form of apparent death from chloroform and the mode of resuscitation by means of electric rhythmic excitations with a gradually increasing current. The amperage

7. Robinovitch, Louise G.: Triple Interrupter of Direct Currents for Resuscitation. Portable Model for Ambulance Service. Jour. Ment. Path., 1909, viii, No. 4.

8. Robinovitch, Louise G.: Bobine à induction pour rappel à la vie, etc., Bull. Société clin. de méd. ment., November, 1908; Induction coil for Purposes of Resuscitation, Jour., Ment. Path., 1909, viii, No. 4.

9. Robinovitch, Louise G.: Thesis cited (Note 4), p. 82 and trace 26.

10. Robinovitch, Louise G.: Different Effects of Various Electric Currents for Purposes of Resuscitation, etc., Jour. Ment. Path., 1909, viii, No. 4.

11. The tracings of resuscitation after primary cardiac syncope from chloroform and ventricular tremulation caused by electrocution are omitted here for want of space.

cannot be read in these experiments because the closures are too short, but there is generally between 4 and 40 milliamperes, corresponding to the currents used—20 and 70 volts. This amperage is obtained on dogs sacrificed for this purpose, so that the closures may be prolonged.

Electrocuted dogs are resuscitated less easily than are chloroformed dogs. It is especially difficult to resuscitate when ventricular tremulation sets in, but the tracing that I present[11] shows that resuscitation is possible even in this condition.

All experimenters on this subject agree that artificial respiration and the Sylvester method are useless when ventricular tremulation sets in.[2, 3, 12] My method seems to give the best results known to-day for practical application, because it produces ample artificial blood-pressure as well as respiration.

APPLICATION IN ACCIDENTAL ELECTROCUTION

According to personal information given me by practical electricians both in Europe and this country, death does not always take place instantaneously in accidental electrocution with moderate industrial currents. The workingman generally touches the "live" wire with his hand or foot; contact is generally "bad," but it is sufficient to cause cardiac and respiratory paresis, from which the patient may die within from a few minutes to

Fig. 3.—Tracings made during usual form of apparent death caused by intensive chloroforming in a dog. Upper tracing, respiration; second tracing, blood-pressure in carotid artery; third tracing, time; two lines indicate one second, during cardiac failure only. In rest of tracing: one line indicates one second. *R*, respiratory syncope; *C*, cardiac syncope; *E*, commencement of electric rhythmic excitations (direct current interrupted 8,000 times per minute, period 1/10); gradual increasing current from 20 to 65 volts. The ample respiratory and cardiac reactions are artificial, caused by the rhythmic excitations; then the small spontaneous heart-beats appear and alternate with the ample artificial ones. The cross shows where the first small spontaneous respiration appeared; ample artificial respirations alternate with the small spontaneous ones. *S*, synchronous respirations and heart-beats; final resuscitation.

one-half hour after the accident. These are facts observed in daily accidents, regardless of some experimenters' claim that all is well if the patient's heart beats and he breathes when taken out of the circuit.

The blood is asphyxiated, dark, after the slightest shock; a few rhythmic electric excitations will help to whip up the circulation and respiration if the excitations are practiced immediately following the accident or as soon as possible—before the patient is removed to a hospital. Without this help the patient may die when he is brought into the ward—some half hour after the accident. The blood remains asphyxiated even after resuscitation. This asphyxia may continue during many hours.

APPLICATION IN SURGERY

Direct and indirect cardiac massage has claimed its victims of chloroform poisoning in surgical work.[13] Dr. Crile's method of resuscitation is brilliant and admirable as regards the range of time during which the heart's action may be restored. Unfortunately, his method presents physiologic limitations; resuscitation after a period of seven minutes (in man), counting from the time of cardiac arrest, becomes useless, because the anemia of the brain during this time is fatal to the life of the brain cells; restoring heart action becomes useless from the point of view of restoration of life.

My method has the great advantage of simplicity; it does not necessitate opening the carotid artery and injecting a pint or so of solutions into the heart; it does not necessitate opening the trachea. The method may be applied immediately, when the first sign of cardiac or respiratory failure appears. Before an operation is commenced the electrodes may be put in their proper places under the patient; the chest electrode (25 by 30 cm., the loin electrode (12 by 25 cm.). The apparatus and chosen electric source should be in readiness before the operation is commenced.

The accompanying tracing (Fig. 3) shows that it is possible to resuscitate dogs after respiratory and cardiac function is no longer registered during a given period of time. It should not be assumed, however, that resuscitation is easy in all grave cases. There are not two subjects alike as regards physical vitality. For practical application in surgery the safest method is to commence practicing rhythmic electric excitations at the first sign of respiratory or cardiac failure. The surgeon does not fold his arms and wait until both the respiration and the heart have failed. In a series of experiments on dogs I commenced the rhythmic excitations a few seconds after respiratory syncope set in—in imitation of what a surgeon would do if he had a patient showing signs of syncope from chloroform or ether. Resuscitation was easy and complete in these experiments after a few rhythmic excitations. Resuscitation is more difficult, of course, when heart failure dominates the accident.

Considered in its proper light, the method should really serve as a preventive measure against grave forms of syncope, because a few rhythmic excitations, practiced in time, promptly oxygenate the blood by reason of the ample respiratory and cardiac reactions.

CLINICAL APPLICATION

November, 1908, I had occasion to revive a patient in a condition of profound syncope caused by chronic morphin poisoning. She was in Dr. Magnan's service, Ste. Anne Asylum, Paris. Dr. Magnan had revived her after she had had a first attack of syncope. A second attack

12. Rodenwaldt, Ernest: Ueber Verletzungen durch elektrische Starkstroeme vom gerichtsaerzlichen Standpunkte, Vrtljschr. f. gerichtl. Med. 3 Volge, xxxvii, 1.

13. White, Charles S.: The Rôle of Heart Massage in Surgery, Surg., Gynec. and Obst., October, 1909.

set in within a few minutes; his assistants attempted to revive her by applying the Sylvester method and rhythmic traction of the tongue; this proved useless during a period of twenty minutes. The patient's face became "blue" from asphyxia. As is known in morphin poisoning, the respiratory center is paralyzed first, heart failure following, as is the case in ordinary asphyxia. The patient's respirations were about 3 or 4 per minute; the pulse was hardly perceptible and death seemed to be imminent. I applied electric rhythmic excitations; the patient revived definitely after a period of from twenty-five to thirty seconds.[8, 14]

OPERATION FOR RETRODISPLACEMENT OF THE UTERUS*

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PHILADELPHIA

I am not greatly interested in the minute anatomy, the exact relative normal position of the organ and ligaments when I am faced with a displacement of the uterus. There are so many factors entering into the new position, and so much uncertainty as to which one or which combination causes the trouble that the question to be solved is rather, how the uterus can he held in such a position as to relieve the untoward symptoms and at the same time do no future damage. It matters little to us whether the means used are the natural ones or not. As a matter of fact, this is exactly what is done by each and every operator without exception, no matter how learnedly in the first instance he discusses the natural supports.

In further discussion I shall merely present the procedure with which I have been experimenting for the past twelve years or so, which is, I think, fully established and amply justified by results, and which has taken the place of all other procedures in my practice for this class of cases.

The operation is not new. I first referred to it in a paper in 1902 after a few years' trial only. I have performed it almost constantly ever since, modifying it here and there at times as apparent difficulties arose and as it seemed necessary to overcome certain objections and certain faults in results; and I find at the present time a completed technic which is, I think, perfect.

Primarily the operation was done empirically with no idea of its true mechanics; and, this being so, it may readily be appreciated why apparent difficulties were hard to overcome and why changes were necessarily but blindly made from time to time. And yet, with it all, the general principles have remained the same from the first, viz., "the round ligaments brought through an opening made in the broad ligaments and united behind and to the uterus." The proposition is simple, the resulting advantages being manifest only when the procedure is properly carried out. The mechanism is plain, but has never to my knowledge been fully appreciated or fully pointed out, even by Webster, who has for the same length of time performed an operation with exactly the same principles but varying slightly in technic.

What is the position and condition of the uterus in the normal female pelvis? The fundus is bent slightly on the cervix and well forward of the direct axis of the pelvis, it is freely movable in all directions within certain well-defined limits, moving always with the cervix as a movable pivot. The whole organ is so high in the pelvis as to allow the top of the fundus to arise well above the iliopectineal lines of the bony pelvis. The ovaries are suspended correspondingly high and rest on the upper posterior portion of the broad ligaments. Any operation which does not take these conditions fully into consideration and which does not leave the organs approximately in these conditions and positions cannot be considered as ideal.

In all the confusion of anatomy, physiology and pathology, sight is lost of the fact that in the vast majority of cases there is a general relaxation and stretching of all the supports, often of the whole of the abdominal contents, and that the uterus as well as the ovaries lie down, as it were, in the pelvis limp and inert; the stretching of the ligaments is that of overstretched rubber, not that of hypertrophy of tissue which may subsequently undergo involution. The loss of support is

Fig. 1.—Uterus and appendages low in the pelvis and inclined backward. This is brought out more clearly by contrasting Figure 1 with Figure 2, in which one side is raised by the fingers well up above the iliopectineal lines while the opposite side remains low down in the pelvis.

a complex one, not merely the defect of one ligament: and the ratio of loss in each individual element of support is impossible of estimation, nor is it worth while to try to estimate it. The point is not to tell just what is the degree of relaxation of one of the uterosacral ligaments or both, what that of the right uterovesical ligament or both, or what that of the broad ligaments, and then to attempt to devise an operation for each and all these supposed defects, but to recognize the fact that before us is a group of organs which for some reason or other (it matters not what) are in a false position and being so are exposed to traumatism and other influences which will eventually or have already brought about a train of symptoms which it is very desirable to abate. These organs having lost the use of their natural supports, can we successfully substitute others to take their place? These are the lines on which I have worked most successfully and this is the basis of the accompanying operation. The round ligaments are used as artificial supports in an artificial manner to accomplish

14. Robinovitch, Louise G.: Resuscitation of a Woman in Profound Syncope Caused by Chronic Morphin Poisoning, Jour. Ment. Path., 1909, viii, No. 4.

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

what Nature originally accomplished, viz., "a uterus with the fundus forward of the direct line of the axis of the pelvis, freely movable in all directions on the cervix as a movable pivot, the fundus raised up to and above the iliopectineal lines and the ovaries swung correspondingly high and free from all attachments on the posterior side of the broad ligaments." The simple procedure of drawing the round ligaments around the posterior side of the uterus, fastening them together as they meet, and then fastening them to the uterus itself

Fig. 2.—Fundus drawn well forward and away from the sigmoid flexure; hemostatic forceps perforating the broad ligament from behind to its anterior aspect, on which lies the round ligament. A pair of tissue forceps is grasping the round ligament and carrying it into the bite of the perforating hemostatic forceps.

at a selected point, fulfils perfectly each and every one of these indications.

A study of the accompanying illustrations, which were drawn at the operating-table, will render the operation and its results perfectly clear.

Contrast Figure 1 with Figure 5 and note the following points: the distance from the fundus to the sigmoid, the distance from the fundus to the pubis, the height of the fundus and ovaries as shown by the shadows and the iliopectineal lines; also the uterosacral ligaments.

It will readily be recognized how well forward of the axis of the pelvis the fundus is brought, how high it rises in the pelvis and how high are the ovaries and Fallopian tubes.

The question at once arises: What forces are brought into play to bring these organs into such perfect position and how do they act to retain them there?

The uterus is upheld by the encircling round ligaments (Fig. 5, *a-b*).

The ovaries and Fallopian tube are upheld by the passage of the round ligaments under the ovarian ligaments (Fig. 5, *d*).

The uterus is held forward by three forces, viz.:

1. The pressure of the intra-abdominal force on its posterior aspect.

2. The resistance of the encircling band of round ligaments (Figs. 7, 8, *B-C;* Fig. 5, *a-b*).

3. The pull forward and downward of the round ligaments at their attachment at the uterine cornua (Figs. 5 and 8, *b;* Fig. 9, *A*).

The whole structure is steadied by those portions of the round ligament running to the normal abdominal attachments (Fig. 8, *A-C;* Fig. 5, *a-c*).

It will be noted by reference to the illustrations (Fig. 2) that the forceps perforate the broad ligament close to the uterus and directly under the ovarian ligament. This is essential to the best results. A too low perforation in the broad ligament will give an unsatisfactory result. When the round ligaments are adjusted and brought snugly together posteriorly the ovarian ligament rests on each round ligament and, without so much as touching the ovary or Fallopian tube, always and with absolute certainty insures the proper and safe elevation of those organs. This is the only operation of which I know that secures this result; and if one recognizes the

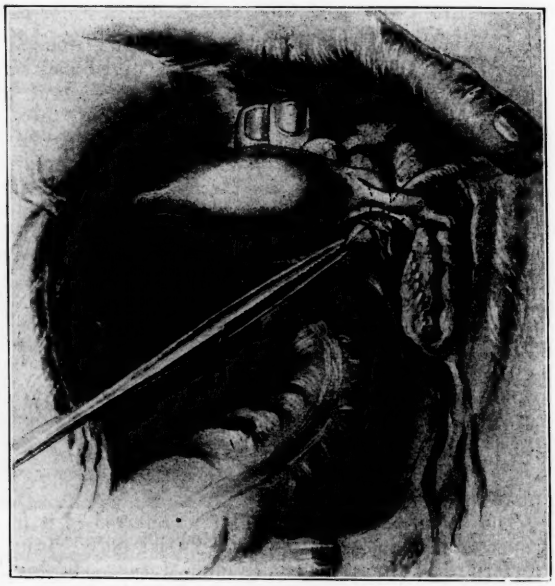


Fig. 3.—Round ligament in the grasp of the hemostatic forceps and in process of being drawn through the broad ligament to its posterior aspect.

truth that it is often the prolapsed ovary which induces the symptoms, one must readily recognize the great advantage of this. When the uterus is thrown forward by almost any other operation, the ovary will usually rise in the pelvis with it, and the displacement of the two organs will be corrected at one and the same time. But every operator will recognize the fact that there is a certain large group in which the ovarian ligaments are relatively more stretched than those of the uterus, and in spite of the fundus being brought forward the ovaries are still prolapsed.

The elevation of the ovaries is not accomplished by the general elevation of the uterus alone, but is materially aided by the rolling forward a quarter of a circle or more of the top of the broad ligament owing to the pull backward of the round ligament as it passes through the hole in the broad ligament, and the more the posterior pull of the round ligament the greater the tendency to the rolling forward of the top of the broad ligament and the consequent elevation of the ovary and Fallopian tube. I have in no case seen this occur to such an extent as in any way to endanger the patency

of the tube. This whole mechanism is perfectly plain when seen in the living subject and is perfectly compatible with every known mechanical law.

The second fact accomplished is that of the elevation of the uterus and everything connected with it (Fig. 5). This is brought about, of course, on principles somewhat similar to those which would be involved in grasping a boy in one's arms and lifting him up. This requires fixed points from which to act. In the operation these points are the attachment of the round ligaments to the abdominal wall, their attachments to the fundus uteri, their attachment throughout their whole course through the broad ligaments, and, finally, the artificial attachments made by the operator as they are brought together behind the uterus and stitched to that organ.

It has been said in criticism that the round ligaments will be stretched by the weight put on them and that the weakest part of the ligament, viz., the abdominal wall end, is the part which carries the whole weight. Only ignorance of the mechanics and the fact that the critic has not performed the operation can justify this criticism. If it be contended and believed that the weight of the uterus and pelvic organs can be sustained by the longitudinal pull on the round ligaments, as is the case in the Gilliam, the Mayo, the Montgomery, the Alexander and every other modification of this class of pure

Fig. 4.—Both round ligaments drawn to the posterior portion of the broad ligament and approaching each other.

suspension operations, in how utterly prejudiced a condition must be the mind which fails to grasp the fact that the downward pull of the organs against the lateral resistance of the full length of the ligament has only a fraction of the chance of overstretching which obtains in the longitudinal pull! In the operations of the class just mentioned, pure and simple suspension operations all of them, the full success of the result depends entirely on the suspension, not another element entering into the result. Furthermore, in these operations one and all the pelvic organs are lifted by sheer force into the abdominal cavity, there to be suspended in a position they were never intended to be, with lessened mobility and the full weight of the downward drag, permanently dependent on the integrity of the round ligaments alone.

Contrast this condition with the operation under consideration. The uterus is lifted up and sustained by the encircling round ligaments as shown in Figures 6, 7 and 8. But only temporarily is this full force put on the round ligament. The fundus is thrown forward of its center of gravity, and as the patient lies on the operating-table with the abdomen open the fundus remains forward where the hand places it (Fig. 5). In this position the intra-abdominal force is exerted on the posterior aspect of the fundus, forcing it the further forward and the more surely holding it there. Gravity also aids this action.

What occurs when the patient arises? On certain movements the fundus has a tendency to go backward. Should this occur the intra-abdominal force would soon be exerted on the anterior aspect of the fundus and the uterus would be forced to a posterior position.

In studying the mechanism of the forces at play it is soon evident that two things prevent this accident.

1. The sling back of the uterus formed by the round ligaments properly adjusted meets the force temporarily urging the fundus posteriorly and obstructs that action.

2. The force of the fundus against the encircling round ligaments causes a pull on the ligaments at their attachments to the anterior uterine wall; and the harder this pull the greater the tendency to draw the top of the fundus forward and downward and to antagonize the tendency backward.

In other words, we have two forces acting against and neutralizing the efforts of the uterus to go backward, and it is impossible for the one to be brought into play without the other instantly operating to aid it.

Until some effort of the individual causes the situation to arise which attempts to force the uterus backward,

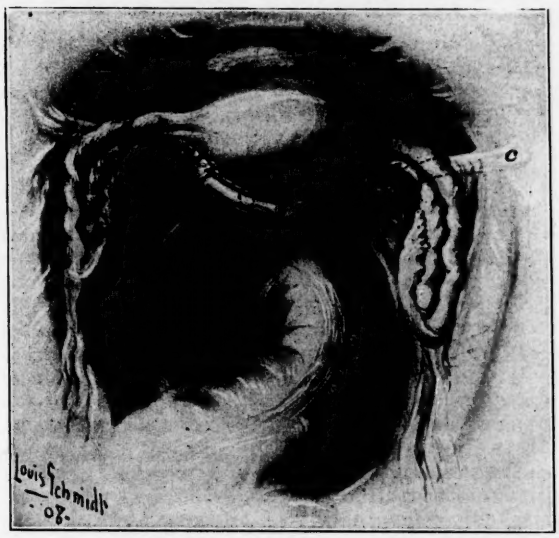


Fig. 5.—The two round ligaments united to each other, and, at two points, to the uterus itself; the operation is completed.

the uterus remains quietly forward by combination of gravity and intra-abdominal force, and no tension whatever, other than that which is being exerted to uphold the uterus, is put on the round ligaments. In other words, for the most part there is no pressure exerted on the round ligament at all; it is only called on intermittently and temporarily to exert itself and when it does so at all it offers two points of resistance: in the obstruction posteriorly and in the pull forward and downward

at the uterine cornua, thus subdividing the work put on it.

In all the suspension operations, without exception, the full weight of the pelvic organs are permanently dragging on the normal ligaments in the most vulnerable direction. Those parts of the round ligament running to the abdominal walls are only slightly affected in this operation; they act mostly as guy-ropes to the whole structure, as similar ropes act in holding up a derrick, and in this operation brought into action only intermittently and temporarily. There is therefore absolutely no chance of their becoming overstretched, as has been suggested. At one time in the process of the evolution of the operation I severed these ends and did not use

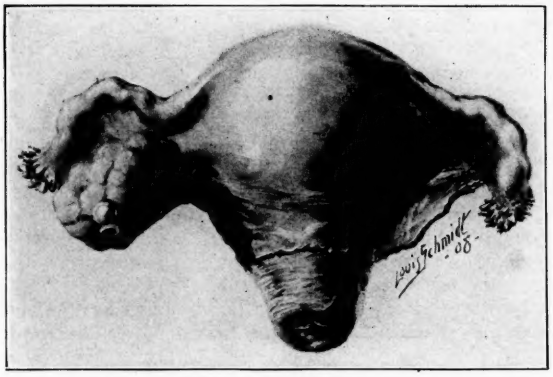
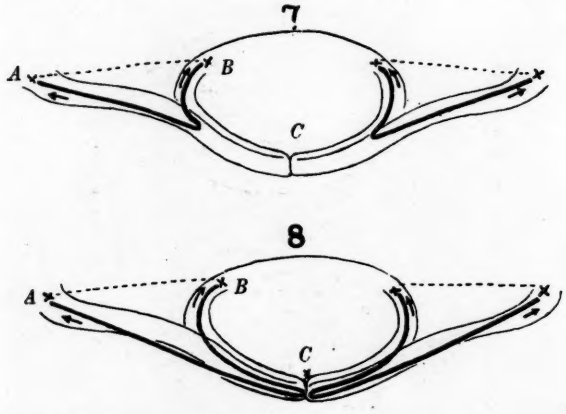


Fig. 6.—Uterus removed by amputation one year after operation for displacement, the symptoms not having been relieved. The round ligament can be plainly seen encircling the uterus and attached to that organ.



Figs. 7 and 8.—Diagrams showing the ligaments partially and completely drawn in place, as is done in the operation.

them at all, so little did they seem to enter into the mechanism.

For a full understanding of these important forces, study Figure 9. This represents a lateral section of the uterus, broad ligament and appendages. Take the diagrammatic lines *A, B, C*. When force is exerted on *C* backward (as would be the case if the uterus were forced back against that point) the effect on *A* will be downward and forward, provided *B* be a fixed point. A mere glance at the diagram and the line of the forces makes this clear; it is purely a question of mechanics.

In the operation point *C* of the diagrammatic line is represented by the point of artificial attachment of the round ligaments on the posterior part of the uterus (Fig. 5, *a*).

A in the diagram is represented by the natural uterine attachments at the cornua of the uterus on its anterior face (Fig. 5, *b*).

B, in the diagram, is represented by the ovarian ligament, which is relatively a fixed point (Fig. 5, *d*).

Although the ovarian ligament is not an absolutely fixed point, yet it is sufficiently so to supply the point of fulcrum and produce the result pointed out.

The moment the uterus attempts to leave its forward position it meets the resistance of the obstruction of the encircling ligaments as well as the forward and downward pull at the anterior cornual attachments. It thus rides in a cradle as it were, movable backward and forward without ever being able to get back beyond its center of gravity or posterior to the direct line of axis of the pelvis. Hence the third force at play (the intra-abdominal force) is constant in its pressure on the posterior aspect of the uterus and thus trebly insures a permanent result. But one possible thing can happen to spoil the operation, viz., the complete breaking down of the suturing, which is so simple as to make that accident inconceivable.

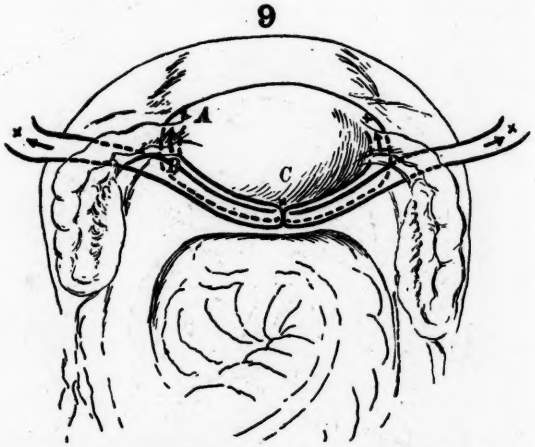


Fig. 9.—Outline sketch showing forces brought to bear and their results after operation is completed. When force is exerted on *C* backward (as would be the case if the uterus were forced back against that point) the effect on *A* will be to draw it downward and forward, provided *B* be a fixed point.

In adjusting the ligaments as they are brought together back of the uterus care must be taken first to draw the inner circle of the doubled ligaments (Fig. 4, *a-b*) snugly about the uterus as the organ is held in a good anterior position by the hand. They are then sutured together by a single stitch. The last step is to fix the loop to the uterus by a stitch or two at a point which will insure its anterior position. It is best not to make the attachment at a point higher than necessary to secure an assurance that the fundus cannot double backward over the encircling round ligaments. This point is found with little difficulty. If this precaution is not followed, the result may be unsatisfactory.

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Care of the Insane.—Proper treatment and nursing of the acutely insane call for the broadest intelligence, not only on the part of the physician, but also on the part of the nurse and all who are brought into immediate contact with the patient.—W. K. Walker, in *Pennsylvania Medical Journal.*

ROUND-LIGAMENT VENTROSUSPENSION OF THE UTERUS *

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COLUMBUS, O.

As everyone is probably aware, this is the original ventrosuspension of the uterus in which the ligaments are left intact and in which the peritoneal investment is not disturbed. In devising this operation I wanted to get something that was as nearly physiologic as possible—something that would meet the requirements, without the drawbacks incident to the methods then in vogue. Especially was I anxious to get away from all fixations, as they are inherently pernicious and often fraught with disastrous consequence. The uterus is a mobile organ and cannot be fixed in any position or agglutinated to any other organ without detriment to itself and to other organs and parts which are contiguous or correlated. It must conform to various conditions of the bladder; it must alter its position according to the fulness or emptiness of the rectum; it must yield to the impulses of respiration and adjust itself to the various movements of the body. Unless it does so, it will impinge on, or be impinged on by other viscera and both will suffer. But this is not the worst. The paramount functions of the uterus are those essentially related to the great act of reproduction—pregnancy and parturition. The bound-down uterus cannot accommodate the growing fetus and the result, in many instances, is its premature expulsion. Should the fetus go to term, as it sometimes does, fortunately or unfortunately, it will be at the expense of unequal uterine development, distortion, changed axis, unbalanced muscular action and ineffectual expulsive effort. Such conditions at the accouchement always create consternation and too often culminate in disaster.

I shall not attempt to discuss the still mooted question as to what are the essential supports of the pelvic viscera, but there is one thing in which everyone agrees, and that is the necessity of having an intact pelvic floor to keep the viscera from settling. The first essential, then, toward correcting the backward displacement of the uterus is to restore the pelvic floor and the next is to replace the uterus and keep it there. The only way to keep it in position without compromising its usefulness is to utilize its natural guys—the round ligaments. Recognizing this fact, Alexander devised the operation of shortening the round ligaments at the inguinal outlet, and this is the basic principle of all modern operations for anchoring the uterus; but the Alexander operation makes no provision for the adherent, retroverted uterus, the condition most frequently calling for operation.

The caption of this paper signifies a suspension of the uterus from the abdominal wall by means of the round ligaments. This is a palpable misnomer, as will appear later, but was used as the most eligible term to express an approximation to the truth. Suspension of the uterus is neither rational nor feasible. None of the ligaments of the uterus, even the strongest, acts as a suspender of the uterus under normal conditions. A view of the uterus and its ligaments *in situ* will make this clear. The ligaments are all on practically the same plane with the uterus and lax; consequently, they cannot exert any suspensory influence. Should the uterus settle in the pelvis, or draw away from its moorings so as to assume a lower plane and put the ligaments on a stretch, they may, in a measure, become suspensory, but they soon prove their inefficiency by yielding to the sustained traction and thereby become of little value in a rôle for which they were never fitted. These little cords, like all the other uterine ligaments, are lax and allow of considerable latitude of motion backward and forward, but exert a gentle influence to prevent the organ from passing the vertical line. A slight resistance on the part of the round ligaments is ordinarily sufficient to check the backward movement of the uterus when, with the changed position of the body or the movements of respiration, the organ falls forward into normal anteposition. This, then, was the principle on which, as I believed, the solution of the question depended, and it was along these lines that the operation was devised. The fact that there have been a number of modifications of the original operation only serves to emphasize the strong probability that the principle is right and that round-ligament ventrosuspension, in one form or an other, has come to stay. Of these modifications, all of which are good and some excellent, I shall not speak, as they are each and all sustained by men of ability who are able to take care of their own. What I desire especially to accentuate in this paper and to reiterate, is the simplicity, safety and efficiency of the original operation, and its freedom from unpleasant sequelæ.

OBJECTIONS

The principal objection urged against the operation as originally devised was the danger of intestinal obstruction. This was brought forward early in the history of the operation, but of late I have heard nothing of it. That the objection was based on theoretical grounds entirely and not well founded is made manifest by the crucial test of time and numbers. Thousands of cases, during a period of more than a decade of time, have failed to furnish a single authenticated case of intestinal obstruction due solely and intrinsically to the operation.

The objection has also been advanced that after parturition the ligaments fail to exert any restraining influence over the uterus and that that organ reverts to its original malposition. This is true, but in a temporary sense only, just as it is true of many other uteri which have not been misplaced before, and is due to the size and weight of the uterus and elongation of the ligaments—not only the round, but all the ligaments which tend to hold the uterus in place. It is not only the uterus which develops during pregnancy, but the ligaments, the vagina, and all the soft parts of the pelvis, so that immediately and for some time after delivery, the pelvic cavity is more capacious and there is not the snug relationship of organ to organ which exists in the normal unimpregnated state. In operations during pregnancy, I have seen the round ligaments greatly elongated and of a thickness equal to that of the little finger. After involution of the uterus, the ligaments and soft parts has taken place, it will be seen that the uterus has returned to its normal position and that the round ligaments are as efficient in keeping it there as before.

Again, it has been objected that the operation is too apt to be followed by suppuration. There is not force in this objection. It has been many years since I had a suppuration following round ligament ventrosuspension. True, in the beginning I had cases of suppuration, some of a most aggravated type, but as I became

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixty-First Annual Session, held at St. Louis, June, 1910.

familiar with the manipulative details, learned to deal with the tissues gently, and acquired that automatic asepsis that comes with practice, then suppuration ceased and with it the concern for suppuration. Suppuration following this operation means the same as in any other, neither more nor less.

ADVANTAGES

Having disposed of the objections to the operation, I wish now to emphasize and reiterate its advantages. The cardinal virtues of this operation are to be found in its simplicity, safety, facility of execution and efficiency. It is so simple that any one of ordinary intelligence can understand it, and any one of ordinary surgical training can do it. It is so safe that any untoward result from it is almost inconceivable. The operation can be done with such ease and facility that with ordinary surgical skill and care there should be no question of infection or exhaustion. On this account it is especially valuable in multiple or combined operations in which it scarcely appreciably adds to the risk.

As regards its efficiency, I have never known a failure in a properly selected case in which the work was properly done. I have had one failure in my own practice; I attempted to anchor an anteflexed and retroverted uterus, held low down in the pelvis by a rigid and unyielding pelvic diaphragm, such a uterus as one occasionally finds in the virgin, which is not amenable to treatment of any kind. In such a case the operation should never be attempted. Neither should it be attempted in any case in which the uterus and appendages cannot be freed so as to allow the uterus to occupy its normal position without tension or restraint. Such cases are, however, extremely rare. Another cause of failure, as I have observed, is careless suturing of the ligament. Occasionally the ligament is not transfixed by the suture, when appearance would indicate that it had been. This is owing, in part, to the constriction of the ligament where it passes through the abdominal parietes. In order to be sure that I have the ligament on my needle, I direct my assistant to relax traction on the ligament while the needle is *in situ*, when, if the ligament does not retract, I know I have it on my needle. I have had occasion to remove the uterus at different periods after round-ligament ventrosuspension, and have always found the ligaments firmly attached to the abdominal wall and not yielding to any traction which I was willing to exert on them. As regards pregnancy and parturition after this form of suspension, I have found not only no evil results, but actual improvement in conditions owing to the uterus being held in the normal position. Cases of this kind are now too numerous to require special mention. While the technic is quite generally understood, the fact that I still occasionally get letters of inquiry with reference to certain points connected with it, suggests to me the desirability of again publishing it in this connection.

TECHNIC

The peritoneal cavity is entered by an incision at the usual site between the umbilicus and pubes. Adhesions are broken up and the fundus brought forward. By lifting up the anterior surface of the broad ligament on one side on the tip of a finger applied to its posterior surface, the round ligament is brought into view and picked up either between the thumb and finger, or with a bullet forceps.

Selecting a point an inch and a half from the uterus, a thread is passed under the round ligament (with its peritoneal investment) and the ends of the thread are brought out of the opening and secured in the bite of a clamp forceps which is laid on the surface of the abdomen. The other ligament is sought for and secured in the same manner.

At a point about one inch and a half above the pubes, the peritoneum, muscle and fascia on one side of the wound, are caught up by a volsella and pinned together, care being taken that the edges of these layers are in line. Traction is now made with the volsella and, with a claw retractor, the skin and superficial fat are drawn in the opposite direction, and with a sweep of the knife the face of the fascia is cleared. With a slender-nosed forceps, or better with a Cleveland ligature-carrier a stab wound is made from the surface of the fascia into the peritoneal cavity. This wound is one inch from the edge of the incision and about one inch and a half above the pubes. The jaws of the forceps are separated so as to make the opening large enough to permit the ligament to be drawn through it, then by depressing the handle the jaws are brought into plain view at the abdominal opening. The thread which loops the round ligament is now placed in the jaws, the clamp forceps and the perforating forceps removed, the latter bringing with it the thread and the ligament. Now, while the ligament is held taut with the loop end a quarter of an inch above the surface of the fascia, a catgut suture is passed through it including the tissues on either side, and back again where it is tied. This is cut close to the knot, the suspending thread cut on one side close to the ligament and withdrawn and the volsella and retractor removed. The other side is dealt with in like manner and the abdominal incision closed.

After both ligaments have been fastened it will be seen that an opening exists between the uterus and abdominal wall of from 7 to 9 inches in circumference, thus obviating any possibility of strangulation of the bowel. It will be observed that the uterus is not suspended but rests easily and naturally on the bladder, from which it can be raised to a position little short of the vertical. Thus the uterus is enabled to conform to the altered conditions of the bladder and rectum and to the various bodily movements. Should pregnancy ensue the ligaments develop *pari passu* with the growth of the uterus and there is neither embarassment in gestation nor difficulty in parturition.

IN PROLAPSUS

The application of this principle to prolapsus uteri is a thought of later years. Sacrifice of the uterus as in vaginal hysterectomy, does not always secure immunity from secondary prolapse of the vaginal walls, bladder or rectum. The Watkins-Wirtheim operation, while elegant and most satisfactory in the main, is applicable only to post-climacteric cases. This operation requires such extensive dissection of the bladder wall that many are loth to undertake it. Uterus fixation is temporarily, at least, very satisfactory, but cannot always be relied on for staying qualities. Most of the other methods which have been proposed for this condition are obsolete. A few years ago I conceived the idea of using round-ligament ventrosuspension of the uterus with certain modifications in prolapsus uteri, and although I have used it only a few times, the results so far have been eminently satisfactory—more satisfactory than with any other method of which I have

knowledge. The steps of the operation are exactly those of the ordinary round-ligament suspension with the difference that the round ligament is first drawn through the broad ligament by means of perforating forceps and the thread which is looped around it and then taken up through the abdominal wall by the same thread and in the manner already described. Of course, the pelvic floor is to be repaired as in other operations and occasionally it will be found of advantage to amputate the cervix. The patients on whom I operated suffered from aggravated complete procidentia and today they are in excellent condition with a sense of perfect comfort and well-being so far as the pelvis is concerned. I suggest it as a simple and effectual method of dealing with a very troublesome condition.

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THE EVOLUTION OF THE SURGICAL TREATMENT OF RETRODEVIATIONS OF THE UTERUS *

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CHICAGO

I desire at the outset to enter a disclaimer, in that I believe that the surgical treatment of deviations of the uterus and associated pelvic organs is far from settled, so far that perhaps some of the hysteropexies, the ligament shortenings, the suspensions, the fixations, in their wide divergence may to the next generation look as crude and unscientific as the routine clamp and drainage-tube in ovariotomy now look to us. Perhaps we are a little too inclined prematurely to dogmatize on the subject—and especially the inventor of an operation is like the expert witness, who said: "Your honor, in matters of fact I am often mistaken, but in matters of opinion I know I am right."

The fine adjustment of the mere mechanical technic of any or all of the current operations is of less consequence than the selection of suitable cases and the recognition of the facts that surgical measures are not demanded for all retrodeviations; that there is no fixed normal position of the pelvic organs; that the matter is one rather of normal movements than of normal position; that the normal supports, so-called, are functionally concerned, not with holding the organ in some fixed position, but rather with restraining it within its normal range of movements; that a uterus out of place, if you please, may by a surgical procedure be put in place and so fixed that the fixation is more injurious, more embarrassing than the displacement.

Many would say, not without reason, that we all are prone to treat this subject from purely mechanical points of view and thus to lose sight of essential pathologic changes which have produced mechanical deviations, treating effect instead of cause, like damming up a river to prevent its waters from flowing into the ocean. But on the other hand we must not forget that if the resources of Nature have been exhausted in the production of the lesion we may have recourse sometimes to mechanical measures, irrespective of the fact that if an ideal anatomic and physiologic cure is impossible yet a symptomatic cure may be desirable.

Confining the discussion to the relative merits of those procedures which now have the support of progressive surgery we may classify them under two heads:

1. Operations which give sustaining power by means of peritoneal adhesions or fixation.
2. Operations which give sustaining power by shortening of ligaments.

In the interest of brevity we may disregard surgical operations of whatever class which are performed by vaginal section, not that we should condemn vaginal hysteropexy *in toto*, but that the field is relatively narrow, and the discussion therefore in this place in some degree unprofitable.

The different procedures, therefore, so far as I shall weigh them, narrow down to operations performed through the median or nearly median abdominal section.

Touching the class of operations which give sustaining power by seroserous adhesion or fixation, that is, ventral suspensions and ventral fixations, some will remember thirty years ago when it was a vexed question what to do with a retroverted uterus before closing the abdomen after a pelvic operation, such for example, as the removal of pus tubes. Sometimes cautiously and tentatively and with some misgivings, having a pioneer respect for the peritoneum, we united with a single stitch the fundus or the anterior wall of the corpus uteri to some point in the peritoneum near the pubes. In a few weeks examination usually disclosed the uterus again retroverted and thereby demonstrated the inadequacy of this technic; then several sutures were used instead of one with the same result; then before suturing we scraped off with a sharp knife the peritoneal surface so as to give raw surfaces to be united and the result was strong broad cicatricial union and permanent fixation; in fact, immobilization of the uterus; then was written the tragic and humiliating chapter of mechanical fixation of the uterus, a chapter which told of obstruction of the bowel, dystocia, rupture of the parturient uterus and other obstetric calamities not to mention a formidable list of disabling, distressing consequences, neurotic and circulatory, local and general. Ventral fixation then relegated to the dark ages of surgery soon gave way to ventral suspension of the uterus by less barbarous methods—an operation popularized by Howard Kelly which in the final and successful evolution resulted quite uniformly in stable equilibrium of the uterus, and at the same time left it free in its normal range of movements. The principle was simple and effective; it was to unite to the anterior parietal peritoneum, not the fundus or the anterior wall of the corpus uteri but the posterior wall, and, what is most essential, to that part of the posterior wall just back of the fundus, a surface about one-half inch back of a line connecting the uterine ends of the Fallopian tubes. This surface was united to parietal peritoneum near the uterovesical reflexion. Stable equilibrium and permanent uniform results were secured by the simple change in the selection of surfaces to be united without denudation of the united surfaces and with two or three absorbable catgut sutures; that is, very light adhesions of these surfaces were sufficient. Moreover, this union, by lifting the posterior wall of the corpus against the parietal peritoneum, also served to tilt back the cervix so as to place it nearer to the hollow of the sacrum—a most essential mechanical factor in the correction of retroversion, for if the cervix be normally near the sacrum, the corpus does not have space in which to retrovert.

This operation, modified by myself in a personal experience of several hundred cases, was in a degree satisfactory both as a means of correcting the displacement and in its freedom from the distressing mechanical results which had discredited the obsolete operation of

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

fixation It, however, may give rise to obstruction of the bowel, for it always left a more or less constricted passage around the uterus, especially if the adhesions pull out into cicatricial bands under which intestine could work its way and be compressed. Such accidents, with grave results, have been reported from time to time. Moreover, the operation in incompetent hands, although intended to produce light adhesions only, sometimes sets up union so strong and cicatricial as to amount to the much-dreaded fixation already condemned. These things being so, I finally disregarded my own satisfactory results and those of others, and have almost abandoned the operation, and in place of it for several years have substituted one after another of the various ligament-shortening operations.

In taking leave of the suspension operation, which in the evolution of the subject has held so large a place, I pay it my very appreciative respects; it was a tried and trusted friend; it hardly ever failed; it never, in my personal experience, was followed by bad results which I could attribute to it: unfortunately, however, it is beset by the sentimental objection that it is not anatomic, and, under indictment therefore by the surgical purist is charged with the crime of being unsurgical. It may plead, however, extenuating circumstances, inasmuch as it has suffered from the evil relations and evil associations of fixation, the sins of which, by confusion of the two operations, have been visited on it most unjustly. And so, not without a sense of disloyalty, I dismiss, temporarily at least, an old benefactor, and pass to the more approved ligament-shortening operations.

There is, perhaps, more scientific indication for shortening the uterosacral than for shortening the round ligaments because these ligaments should maintain the normal short distance between the cervix uteri and the hollow of the sacrum, and because shortening them therefore may fulfill an essential indication, but with due respect for contrary opinions no uterosacral operation, so far as I am aware, has been developed to the degree of satisfactory stable results; that is, the shortened uterosacral ligaments do not hold well. They are liable to pull out again soon after the shortening, causing the operation to fail.

The recent operation of Harris,[1] by which a new ligament is formed to supplant the uterosacrals by utilizing the long tendon of the psoas parvus muscle, is too new to permit an estimate of its value; it probably is destined, however, to go the winding way of artificial ligament operations.

Shortening of the broad ligaments is not germane to this discussion, except as it enters incidentally into the round ligament operations.

Perhaps we may drop the curtain on Alexander's operation now regarded as obsolete. The substitute operation once advocated by Goldspohn, while reasonably effective, I would discard as requiring an unnecessary amount of surgery for the accomplishment of the purpose, especially since this surgery might, in the hands of an unlucky surgeon, weaken the region of both inguinal canals and the abdominal rings and thus give rise to hernia, to say nothing of its increased danger of sepsis. The various operations of doubling the round ligaments on themselves or of suturing them in front of the uterus, although very useful in their time, now, in the face of more recent procedures, appear to be passing into disuse. They always were open to objection of frequent inadequacy for permanent results.

1. Harris, M. L.: A New Operation for Prolapse of the Uterus, THE JOURNAL A. M. A., May 14, 1910, p. 1605.

Perhaps without fear of much contradiction we may eliminate from serious discussion all ligament-shortening operations except those which belong to the most recent era, an era which began with the operation of Gilliam. This operation has been modified in technic by Barrett, myself, and others, and has been somewhat, though perhaps not very materially improved. In addition to the merit of being anatomic, and therefore surgical, it gives reasonably permanent results, although possibly not so permanent as the suspension operations of Kelly, already described, approved, and reluctantly laid aside. Gilliam, so far as I am aware, took the longest step toward placing the surgical treatment of retrodisplacements on a scientific basis. Just what form of this method of supporting the uterus by drawing the round ligaments through other structures and fastening them there will stand the final test of experience against all others, the future must decide. The operation is not quite adequate, however, inasmuch as it fails like all others of its kind to hold the cervix back in its normal location near the hollow of the sacrum, an essential requirement for perfection still unfilled by any method so far proposed.

A radical departure from the Gilliam technic, although not entirely different in principle, inasmuch as it passes the round ligament through other structures, is the operation of drawing the round ligaments through the broad ligaments and fastening them on the posterior wall of the corpus uteri. Clarence Webster, I think, first described this operation, and therefore is entitled to the credit of literary priority. I believe it was earlier performed by Frank Andrews. It has been successfully championed by Baldy. I have performed it more frequently than any other for several years, and so far as I have been able to observe results, am inclined to give it a great deal of preference. This and other round-ligament operations are thought to be inadequate and therefore contraindicated when the ligaments are so attenuated as to be incapable of giving much support and in such cases many revert to the suspension operation by adhesion.

I think I would favor this operation even with an attenuated ligament inasmuch as it carries along with the ligaments considerable peritoneum, which becomes adherent and gives supporting power. In fact, the peritoneal element in posterior attachment is a most significant factor—almost as significant as it is in ventral suspension; it combines the advantages of ligament shortening with seroserous adhesions and is free from danger of resultant obstruction of the bowel so much feared in the ventral suspension and the original Gilliam operation.

The pessary, recognized in former times as being of great value, has fallen into unmerited disuse and the correct application of it has become almost a lost art.

One additional word: In this age of dramatic surgical achievement in the abdomen, let us remember that our fathers of the last generation developed plastic surgery on the vaginal side of the pelvic floor to a surpassing degree. Let us keep in sight the fact that any abdominal operation for retroversion or descent, however well selected or performed, may be of little avail against the counter-influence of a relaxed pelvic outlet, and that good plastic work below therefore may be indispensable. Perhaps it is true that the pioneers did better plastic work that we are doing now. It would be interesting entirely if under the blinding influence of major surgery, plastic gynecology should become a lost art.

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THE DISCHARGE OF LUNATICS BY HABEAS CORPUS PROCEEDINGS *

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The constitution of the United States[1] provides that "the privilege of the writ of habeas corpus shall not be suspended unless when in cases of rebellion or invasion the public safety may require it."

It is important at the outset that we have clearly before us in the consideration of this paper a precise idea of the legal significance and aim of the great writ to which it relates. A concise definition, which has generally been accepted as a most complete one, is that given in "Hurd on Habeas Corpus:"[2]

> The writ of habeas corpus is that legal process which is employed for the summary vindication of the right of personal liberty when illegally restrained.

It is along the line of this definition that I proceed to a discussion of the application of the writ respecting a single class of individuals, namely, the insane. Reverting to the historical, it may be of importance to recall that the original necessity for the writ of habeas corpus arose from a great many conditions which demanded remedy, one of the least of which was lunacy confinements. One of these conditions, as will be remembered, and a most important one, was the practice of imprisoning for debt. By far the large majority of habeas corpus cases in the old reports, both English and American, relate to restraint of liberty for reasons other than alleged or adjudged lunacy. We find, at the present day, however, that this writ, designed more particularly for divers other necessities, is being used to an astounding extent in lunacy cases. The increase in its use within the memory of living men has been so marked that it may well be inquired whether it has not become an abuse of privilege. The increase of the popularity of habeas corpus proceedings in lunacy cases has been due to several causes, to some of which I think it highly important that we give thoughtful attention. It is only by a full appreciation of the causes, taken with an intelligent comprehension of the effects that we can proceed properly and with well-founded hope toward a reform.

Let me emphasize that it is not the purpose of this paper to argue for one moment for a suppression of the writ as such. The writ of habeas corpus came into use by reason of a recognized necessity for such a process, and it has undoubtedly become an invaluable part of our judicial system. It is my desire to point out, if I may, the abuse of privilege in the obtaining of this writ by lunatics and those acting in behalf of such persons. In so far as applies to the issuance of the writ in cases of lunatics, I argue for a limitation of such use. In using the word "lunatic" I am not unmindful of the efforts of some of the medical profession to abandon the word, to substitute for it some word or phrase less harsh, something which signifies illness. This position taken by medical men is based, of course, on the modern view of insanity, and is at once both in keeping with that enlightened view and of kindly intent to the patient and his family. With these efforts I am in full sympathy, but as this paper treats the legal side of the subject, I use the term "lunatic," a word which the statutes and the decisions have given a distinct place in medical jurisprudence.

In the first place, in the case of every applicant there must have been an actual incarceration, either as a preliminary act under general police or public health regulations, or by decree of a court in confirming a due inquisition. Few persons apply for a writ of habeas corpus during the period of temporary detention. The applicants for the writ are in practically every instance, those who have been adjudged insane. Time was, we all remember, when persons supposed to be insane were taken to the nearest jail or prison and there confined without examination, without hearing, and without day, and it was the suffering of those thus confined that brought about through Pinel and others the recognition of the great fact that there is nothing of the criminal about an insane person, but that he is simply a sick man. This truth has come to have so firm a place in the mind of society that no longer is it possible—nor indeed is it the desire—to incarcerate an alleged lunatic without a full and fair hearing. It means a great deal, therefore, when we realize that the lunatics applying for discharge by habeas corpus are, as I said before, in nearly every case adjudged lunatics. They are not suspected individuals who have been summarily confined, but are those who have had their day in court, and have been found, in orderly manner by competent tribunals, to be in need of treatment for mental disease. As to these hearings in the several jurisdictions, it may be said that they have at least one feature in common, namely the fairness with which they are conducted toward the alleged lunatic. An examination of the widely differing proceedings throughout our country must convince one that in every instance the man whose sanity is in question has a fair opportunity in the presentation of his case. The variance in these hearings extends all the way from the admirable practice under the New York and Massachusetts laws which treat the patient as a sick man, to that in the District of Columbia which requires his examination before a jury of twelve laymen. A great deal has been spoken and written and much more can be said about the system which gives a jury of laymen the right to determine whether there should be commitment for mental disease. If all hospitals were private institutions conducted for gain, and the superintendents thereof were under lax regulations and without inspection laws, there might be some reason for placing twelve laymen between liberty and confinement. My own opinion, based on a study of European laws and those of some of our own states, and a practice specializing in such matters, is that the commitment may be safely entrusted to a judge. Be the hearing conducted in whatsoever manner, it must be conceded that the practice of committing sane persons to insane hospitals is a relic of ancient days or a creation of vivid imagination. Such being the case, the burden shifts, after adjudication, and it is, or certainly it ought to be, incumbent on the adjudged lunatic to show that he is sane if he is to secure discharge by habeas corpus. This burden should extend further. It should require, as suggested by a committee of the New York State Bar Association, a showing of *prima facie* sanity before the issuance of the writ of habeas corpus. The report of the special committee on the commitment and discharge of the criminal insane, presented at the meeting of that association held in Rochester in January, 1910, recommended that a person confined in any state hospital for the insane might make application for a writ of habeas corpus only on a written verified petition accompanied

* Read before the Society of Medical Jurisprudence, New York City, Dec. 12, 1910.

1. Constitution, Art. 1, Sec. 9, par. 2.
2. Hurd on Habeas Corpus, p. 143

by a certificate made under oath by two qualified medical examiners in lunacy. It further recommended that the examiners in lunacy be required to give the reasons on which they based their belief as to the sanity of the applicant. A requirement such as this would do much to reduce the number of hearings on writs of habeas corpus, for it would operate to prevent the issuance of a large number of such writs.

Certain "leeches" of the legal profession exist in every community, and there is a form of this species which fastens itself on hospital patients. Through the efforts of these shysters, patients who would not otherwise think of such a thing, and who really do not desire freedom, are led to apply for discharge on writs of habeas corpus. Petitions in such cases are not infrequently signed by the attorney as next friend of the patient. The next step, often followed, is to file the proceeding *in forma pauperis*. Thus the attorney after one short conversation or after receiving a letter or a postal card from the patient, is enabled without further consultation or a medical examination, and without taking up the matter with the hospital physicians, to indulge in what may be properly called a "fishing expedition." On the hearing if the patient is remanded, the attorney has lost simply the questionable value of his time, but if the patient is discharged the attorney demands substantial compensation. In a recent case which came under my observation the discharged patient had $600 accumulated savings, of which he complained that the attorney took $135 as a fee and borrowed $300. It is important to add that the remainder supported the patient two months and he was then recommitted to the hospital from which he had been discharged! As to his mental condition, it must be said that while at the time of his discharge he was quiet and contented, the strenuous life which he led during his two months' freedom, with attendant excesses and indulgences, changed him greatly and he returned with his mental disorder aggravated to an alarming degree. This practice, encouraged and fostered by the unrestricted issuance of writs of habeas corpus, has grown in some jurisdictions until it is nothing less than a cruel wrong on the patients and an outrage on justice. One remedy lies, as above suggested, in a requirement that the patient submit with his petition *prima facie* evidence of his sanity, or, in other words, that before burdening the court and hospital authorities, he obtain a substantial showing of reputable medical evidence as a basis for his petition.

Another class of patients seeking freedom through the great writ are the paranoiacs. As is commonly known, paranoia is a most dangerous type of mental disorder. The paranoiac invariably possesses cunning, usually in a marked degree. These patients differ from those to whom I have referred as being preyed on by unscrupulous attorneys, in that the personal activity of the patient is conspicuous in his efforts to obtain discharge. At Dannemora (the New York Hospital for Criminal Insane) the superintendent recently reported that the majority of his patients who were seeking writs of habeas corpus were paranoiacs, and that during five years four such patients who had been thus discharged had committed suicide. The records of many courts also show that in such cases the termination of one proceeding by the remanding of the patient simply marks the beginning of a new proceeding. Many patients suffering from this form of mental disorder have obtained six and eight writs; and as long as the writs are procured so easily, they will doubtless continue—to the retardation of the proper business of the courts, the disheartenment of hospital authorities, and the physical and mental detriment of the patients themselves. The court proceedings in such cases are unnecessary, quite as much so as those in the class of cases earlier discussed. It is self-evident that a requirement of medical evidence in support of a petition for a writ of habeas corpus would perforce prevent oft-recurring applications from the same patient.

In a paper prepared in 1909, Dr. Robert B. Lamb, superintendent of the Matteawan State Hospital, reported the subsequent history of forty-one patients for whom during a given period writs of habeas corpus had been obtained. Seven were remanded to the hospital and thirty-four were discharged. Of these thirty-four, fourteen found their way either to prison or asylum, eight were troublesome to their families because of mental disturbances, three were unable to earn their living and were cared for by relatives, six disappeared from view, two committed suicide, and one succeeded in becoming partially self-sustaining.

In the District of Columbia between given dates in 1905 and 1909, fifteen patients secured their discharge from the Government Hospital for the Insane on writs of habeas corpus. By reason of nearly all of these men having been soldiers and sailors and not residents of the District of Columbia it has been impossible to trace the subsequent history in every case. Of the number thus discharged, however, four were later taken in custody and recommitted to the hospital, one committed suicide, one committed a violent assault in a northern city and was placed in another hospital where he is now confined, one was admitted to a New York State hospital for the insane, and one became an inmate of an institution in the West and by his recent correspondence with a prominent government official has given evidence of profound mental disorder.

It is well worthy of note that during this same period 1,256 patients at the Government Hospital for the Insane were discharged by the superintendent without any proceedings whatsoever, and approximately 900 more were similarly released by the superintendent on parole to relatives and friends.

In an early case[3] in this country it was held that:

> "No principle of right is violated in putting a reasonable and salutary restriction on the liberty of a person who, from the loss of reason and judgment, is unable to provide means for his own cure or who is liable to use freedom from restraint in such way as to increase or prolong his malady."

In the light of this very sensible doctrine, it is clear that after a proper adjudication the patient in confinement is not being deprived by illegal restraint of the right of personal liberty—to use the language of Hurd's definition—and should not, therefore, be entitled to a writ of habeas corpus except on a proper advance showing of mental capacity.

As we consider the rights of the patient, so must we not overlook the rights of society. The men, women and children who are daily on the streets and in other public places have distinct rights which are of as much importance and value to them as any rights of the adjudged lunatic. "Man," says Montesquieu, "is born in society and there he remains." The incompetent is a component part of society and it is therefore necessary that certain restrictions be placed on him that he may not do violence to the welfare of the greater number. To be sure, the insane, as wards of the court, are pecu-

3. Matter of Josiah Oakes, 8 Law Reg. 122.

liarly entitled to the most jealous protection of the court, but it is equally true that the great body social is entitled to the protection of the institutions of justice in the interests of the general welfare of the race. The welfare of the adjudged lunatic, then, should be considered, not of itself, but coordinately with—I am tempted to say, subordinately to—that of society. On the one hand, the discharge of an adjudged lunatic on evidence lacking clear proof of restoration to reason may for the moment please and satisfy the patient, and, on the other hand, it may harass and endanger his fellow citizens without number. In recent years the Rhode Island Supreme Court has spoken on this point with a fearlessness that is refreshing. In the case of Ex parte Palmer[4] the court after hearing the evidence of nine or ten physicians—several of whom were of wide reputation—to the effect that the petitioner was not insane, and on the other side that of four physicians of known probity and experience that it was dangerous to the community for petitioner to be at large, remanded him with these words:

"Charged as we are with the high and imperative duty of protecting the people of the state, as far as lies in our power, from physical injury and violence at the hands of irresponsible persons, we are of the opinion that in order to warrant us in discharging the petitioner from his confinement he must show by a clear and strong preponderance of evidence that he is not insane and that his going at large will not be dangerous to the public peace. That so strict a rule does not obtain in all cases of this sort, that is, in petitions under the statutes of the various states, for the release of persons confined in insane asylums, we are well aware. But we think it should be the rule in a case like the one before us, and we therefore adopt it and shall be governed by it."

In this decision the protection of the court was extended to the community, the court declining, as you have noted, to take the responsibility of discharging because of a lack of "a clear and strong preponderance of evidence that he is not insane and that his going at large will not be dangerous to the public peace."

One needed reform, as I have tried to indicate, is the establishment by the petitioner of a *prima facie* case at the filing of the petition. Another is a uniformity of practice which will result in habeas corpus cases being heard before the nearest judge of competent jurisdiction without the questionable aid of a jury. Some time ago attention was directed by the superintendent of one of the New York state hospitals to a growing practice of the courts of granting writs returnable before other justices in distant parts of the state. The necessity for such a proceeding is purely imaginary; the burden that it puts on a disinterested and honorable institution and its officers is at once harsh and absurd. A striking instance of this abuse was that of a patient in the Willard (N. Y.) State Hospital, who, in September, 1909, after having been remanded in three or four habeas corpus proceedings, secured a writ returnable before a justice in Brooklyn nearly four hundred miles distant. A criminal in California[5] who wanted discharge on a writ of habeas corpus tried this plan of going beyond his own jurisdiction but in that case the supreme court of the state laid down a doctrine of common sense which ought to be appreciated by all who read it. The court said:

"The legislature can never have intended that a party imprisoned under sentence of conviction for a misdemeanor should have the privilege of selecting from the judiciary of the whole state the individual to whom he prefers to make his application, however distant from the place of his detention, and compel the officer having him in charge to convey him, at the expense of the county, it may be from San Diego to Klamath, in order that he might avail himself of a remedy which the local judge of his county was equally authorized to grant. Nor need he stop here; the refusal to discharge by one judge is not a bar to another application before a different judge. After failing in his first application, the party may sue out another writ before a different officer, and thus the term of his imprisonment may be passed in traveling from one part of the state to another, at the expense of the county in which he was convicted, to the entire subversion of justice."

Hearings on writs of habeas corpus, by reason of the supposed exigencies requiring their issue, should be conducted by a judge without a jury. The practice has grown, however, of courts referring the issues raised in such hearings to a jury. This is not because a hearing by the court would amount to a violation of the right of jury trial, for the right of jury trial in habeas corpus cases has never existed. Going back to Blackstone's Commentaries we find the learned author commenting on the fact that the right of trial by jury was not recognized as existing in favor of an alleged lunatic under the common law.[6]

An alleged lunatic cannot be committed it is true, and cannot be tried to determine his mental condition, except by "due process of law," but as Judge Cooley points out in his work on "Constitutional Limitations,"[7] "The term 'due process of law' is by no means confined to trial by jury, but the term covers a variety of judicial proceedings."

There ought to be no room for doubt as to the proper legal method of conducting such inquiries. In the first place, the federal law provides[8] that in habeas corpus cases "the court, or justice, or judge shall proceed in a summary way to determine the facts of the case, by hearing the testimony and arguments, and thereupon to dispose of the party as law and justice require."

You will note that the court is required to proceed summarily, and Bouvier[9] defines a summary proceeding to be "a form of trial in which the ancient established course of legal proceedings is disregarded, especially in the matter of trial by jury."

Still another recognized authority on the subject, Professor Church, in his work on "Habeas Corpus,"[10] confirms this doctrine, using this language:

"There is no provision in the Constitution of the United States, neither is there in any state constitution, which gives the right to have these issues of fact tried by a jury in such proceedings. The constitutions, federal and state, provide substantially, that the right of jury trial shall not be violated, but it is no violation of this inestimable privilege to deny it in chancery proceedings, preliminary examinations and proceedings by habeas corpus."

This matter becomes one of great moment when we observe, as has sometimes been alleged, the judge taking an open and positive position as to the mental condition of the patient while the jury takes an opposite view and the court confirms the jury's verdict. The judge in such cases, by reason of his ability to weigh evidence and his unbiased attitude, can render a verdict just to both the patient and the state, while a jury of laymen, torn by conflicting emotions and personal equations may, and

4. Ex parte Palmer, 26 R. I. 486.
5. Ex parte Ellis, 11 Cal. 222.
6. Blackstone's Commentaries, 1, 304.
7. Cooley's Constitutional Limitations, p. 431.
8. Sec. 761 U. S. Rev. Stat.
9. Bouvier's Law Dictionary, ii, 683.
10. Church on Habeas Corpus, p. 173.

frequently will, decide a mental question on any ground except that of the evidence.

It is the abuse of privilege which leads to corrective measures. A reform must come when an abuse becomes too flagrant. In these cases, we are coming, very generally, to a recognition that the petitioners are getting not only what a humane law and practice afford them, but certain so-called privileges not warranted by the intent of the law and of infinite harm to public institutions, to judicial procedure and to the patients themselves. The time is ripe, therefore, for an enforcement of the rights of the community at large, and if we concur in this view we are brought face to face with the question of how the existing abuses are to be corrected. I have endeavored to outline some needed changes in our laws as well as in our practice under existing laws. There remains to be brought to attention at least one other important method of correcting the evil. I refer to a dissemination of knowledge among the people at large as to present-day methods and management of public institutions for the care of the insane. A growing movement in such hospitals of giving publicity and of inviting medical cooperation is doing much to bring closer sympathy between physicians in charge and those in private practice. For two years past the government hospital at Washington has conducted each winter a series of staff meetings to which the physicians of the city have been urgently invited, and which invitation, it is gratifying to know, has been accepted by a large number of active practitioners. At these meetings, methods used in the examination, the care, the amusement, and the varied treatment of the insane, are discussed fully and freely. By such means the hospital physicians are getting the confidence of the people at large through the family physicians, and the old horror of hospitals—born and nurtured in ignorance—is being replaced by an intelligent idea of the work which the hospitals are striving to perform. This labor of the institutions—I speak with particular reference to the large government and state hospitals—is full of discouraging aspects. The trials incident to the work are materially reduced by cooperation and appreciation such as I have just mentioned, but a further step will be attained when in addition is added the confidence of the legislators, the bench, the bar and the jury box. It may be a far cry to the time when such universal confidence will exist. It ought not to be, for the cause is that of the people. The people have rights which the legislators ought to respect and will respect when they are insistently and persistently presented. As for the bench, the bar and the jury, I believe that a uniform stand by the courts for the protection of the many will be a guidance to the attorneys, as it must be a rule of action for the jury. In all the literature of the law no safer, saner or more fearless decision stands out than that of Judge Ludlow of Philadelphia.[11] This distinguished jurist, reviewing the evidence in a habeas corpus case, and remanding the patient to the hospital, said:

> "To take a proper and just responsibility in such a case as this, requires not bravery but courage—not that quality which sometimes degenerates into temerity, and is reckless of danger, but rather that other quality which is the result of reflection and is always cool and collected. Where our path of duty is plain we ought judicially to be courageous, not brave."

It was nearly forty years ago that Judge Ludlow uttered these words. He was the precursor of other jurists, who have maintained in positive terms their determination to protect society from those who would do it violence, as well as to protect those who would do violence to society. The goal which we seek is the better protection of society, without the releasing of any of the proper privileges and safeguards extended by the law to the mentally deficient. The difficulties in our way are numerous. Although the path of progress at times seems clear, there are ever present obstacles. Some of these are founded on honest bases and must be overcome by a campaign of education; others have their support neither in the law nor in righteousness and must be dealt with vigorously. Until medical science can cure all mental ills, those who suffer from such affliction must be cared for and directed, in ways that are pleasant, if you please, but always in paths that do not permit these unfortunates to be of danger to themselves or to their fellows. The great agencies of the law must be wide open to them, but with the limitations that are essential for the proper administration of justice, and the safety of all the people.

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11. 7 Phila. Rep., 328.

SALVARSAN AND SODIUM CACODYLATE*

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The object of this paper is to present the results obtained by applying to sodium cacodylate the experiments which demonstrated the wonderful destructive action of salvarsan on the spirochetes of syphilis. These experiments are laid down in Ehrlich and Hata's recently issued monograph,[1] and, in brief, they consist, first, of the determination of the tolerated dose of a given substance for normal rabbits, and, second, of the determination of the curative dose for rabbits infected with *Spirochæta pallida*. The results are expressed in the form of a ratio, C:T. Hata has shown that the ratio for salvarsan is at least 1 to 10 with a single intravenous injection.

Interest among clinicians of this country in sodium cacodylate in the treatment of syphilis seems to date from an article by Murphy,[2] who gave a summary of the status of salvarsan at that time and then said:

> It has been announced that this drug will not be given to the profession for a number of months, a fact which forced us to try other preparations of arsenic. The one with which I have been most familiar is the sodium cacodylate, which we have been using for seven years to allay the pain of metastatic, osseous carcinomata.

He mentioned three cases in which the drug, given intramuscularly, seemed to have had a high spirillicidal power. Murphy's lead has been followed by a number of clinicians, and while few published reports have as yet appeared, it has become evident that the results are not uniform. Sodium cacodylate is, of course, not related to salvarsan in any way, except that it contains arsenic, and it would be very surprising if one could substitute, off-hand, a stock preparation for a highly refined product like salvarsan. Still, in view of our

* From the Bacteriological Laboratory of the Army Medical School, Washington, D. C. Published with permission of the Surgeon-General, U. S. Army.

1. Ehrlich and Hata: Die experimentelle Chemotherapie der Spirillosen, 1910.
2. Murphy: The Arsenical Treatment of Syphilis, THE JOURNAL A. M. A., Sept. 24, 1910, p. 1113.

ignorance of the actual spirillicidal power of sodium cacodylate, and of the great interest in the general subject, it seemed worth while to fall back on the experimental method.

TOLERATED DOSE

The problem, then, is to work out the ratio C:T for sodium cacodylate. Runnels[3] has recently given a review of the chemistry and physiology of the cacodylates and has emphasized the subject of purity of the drug. He examined the best of two samples bought in the market and found a sodium cacodylate content of 77.59 per cent. and concluded that the remainder consisted almost solely of water. The preparation used in the following experiments was Merck's, which came in brown glass bottles of one-eighth ounce capacity. Tested by the method of Imbert and Astruc it gave a cacodylate content of 67 per cent. There was no evidence of other impurity than the water of crystallization.

The tolerated dose was worked out for intravenous administration, as this is the most definite method in which to determine curative action. The drug was dissolved in salt solution in proportions which allowed the desired amount to be given within 5 c.c. Table 1 shows the results of injection of various quantities.

TABLE 1.—THE EFFECT OF VARIOUS DOSES OF SODIUM CACODYLATE ON RABBITS OF DIFFERENT WEIGHTS

Rabbit	Weight gm.	Dose per Kilogram	Result
1	2150	0.025	No visible effect.
2	2015	0.01	No visible effect.
3	2055	0.01	No visible effect.
4	2180	0.15	No visible effect.
5	1955	0.15	In a short time drowsy, with some paresis of hind legs.
6	2150	0.2	Drowsy; paresis of hind legs; rapid respiration; very sick.
7	2170	0.2	Drowsy; paresis of hind legs; rapid respiration; dead in twelve hours.
8	2020	0.25	Same symptoms; dead in twenty hours.
9	1970	0.3	Slight symptoms; recovered.
10	2000	0.3	Same symptoms; dead in twenty hours.

All the animals affected showed the same symptoms of stupor, rapid respiration and paresis of the hind legs. The animals that died showed congestion of the lungs and a small exudate in the pleural cavities.

The tolerated dose is the largest that can be given with safety to life; in other words, it is just short of the minimal fatal dose. In the present instance, "T" may be taken as 0.2 gm. per kg. for intravenous administration. Runnels considered 0.3 gm. per kg. as a maximum safe dose in rabbits, but this was by the subcutaneous method of injection, and with half grown animals.

CURATIVE DOSE

The curative dose was worked out on chancres of the scrotum and on lesions of the testicle produced by the eighth, ninth and tenth generations in rabbits of spirochetes from a case of human syphilis.[4] A complete protocol of one of the rabbits is given below.

RABBIT 2 (XX).—Oct. 4, 1910: Black; right testicle injected with 1.5 c.c. of a citrate mixture of serum from the testicle of Rabbit XVII; eighth generation; spirochetes abundant. October 24, small indurated patch in scrotum. October 31, testicle enlarged; nodule in epididymis; oval chancre in scrotum; spirochetes abundant in testicle by dark-field examination, twenty-seven days after inoculation. November 2, serum positive by Wassermann test. November 7, skin lesion much larger. November 9, serum positive. November 17, spirochetes present in testicle. November 21, large chancre, 24 by 12 mm. November 25, spirochetes present in chancre; same size; weight 1333

3. Runnels: The Carbon Compounds of Arsenic in the Treatment of Syphilis, New York Med. Jour., xcii, No. 22, p. 1053.
4. Nichols: Experimental Yaws in the Monkey and Rabbit, Jour. Exper. Med., xii, No. 5, p. 620.

TABLE 2.—SUMMARY OF THE FINDINGS IN RABBITS AFTER THE INJECTION OF VARIOUS DOSES OF SODIUM CACODYLATE

Rabbit	Weight gm.	Condition at Time of Treatment *	Dose per kg.	Examination for Spirochetes After Treatment: 1st Day	2d Day	3d Day	4th Day	5th Day	6th Day	7th Day	8th Day	9th Day	10th Day	11th Day	12th Day	Remarks
1 (XIX)	2330	Large chancre of scrotum, 18x18 m.m. Sp.+	.005	+.005	:	+	:	+	+	:	:	:	+	+	:	No effect on spirochetes or on lesions.
2 (XX)	1333	Large chancre of scrotum, 24x12 mm. Sp.+	.005	+.005	:	+	:	+	+	:	.01 pro kg. 606	—	—	—	—	No change in spirochetes or in lesion until 606 was given; then rapid healing.
3 (XXXII)	1900	Lesion of testicle size of olive..... Sp.+	.025	+	+	+	+	:	:	+	+	:	:	.01 pro kg. 606	—	Lesion became smaller; spirochetes persisted, active and numerous until 606 was given.
4 (XXXV)	1960	Lesion of testicle size of large olive.. Sp.+	.025	+	±	+	:	:	:	:	+	:	+	:	:	Lesion became smaller; spirochetes partly immobilized at first.
5 (XXXIV)	1930	Chancre of scrotum, 12x16 mm..... Sp.+	.05	+	+	+	+	+	:	+	:	:	:	:	:	No effect on spirochetes or on lesion.
6 (XXXIII)	2000	Large diffuse lesion of testicle..... Sp.+	.075	+	+	:	+	+	+	+	+	:	:	:	:	No effect on spirochetes or on lesion.
7 (XXIX)	2240	Lesion of testicle size of olive..... Sp.+	0.1	+	+	+	+	:	+	:	:	:	:	:	:	No effect on spirochetes or on lesion.
8 (XXXVI)	1975	Chancre of scrotum, 18x17 mm..... Sp.+	0.15 "606"	+	+	:	+	:	:	:	:	:	:	:	:	No effect on spirochetes or on lesion.
Hata XI	2360	Two chancres of scrotum, 20x20 mm. Sp.+	0.015	—	—	—	:	:	:	:	:	:	:	:	:	Spirochetes destroyed in twenty-four hours; lesions healed in two and three weeks.

* + = Present, active; ± = present, motionless; — = not found.

gm.; 0.005 per kg. sodium cacodylate intravenously. November 26, spirochetes present, sluggish in movement; 0.005 per kg. sodium cacodylate intravenously. November 28, spirochetes present, active, numerous, no change in lesion; serum positive. November 30, spirochetes present, active. December 1, lesion 22 by 17 mm.; spirochetes present, active. December 3, 0.01 per kg. salvarsan intravenously. December 4, spirochetes not found. December 5, spirochetes not found; lesion 16 by 16 mm. December 6, spirochetes not found; lesion much smaller. December 9, spirochetes not found; lesion much smaller. December 10, spirochetes not found; lesion nearly healed. December 12, lesion nearly healed; doubtful serum. December 19, no remains of lesion, serum negative.

When in the course of this work the dose of 0.025 per kg. was reached, it was at first thought that some curative effect was becoming evident in Rabbits 3 and 4, because the lesions became smaller after treatment, and the spirochetes were in part immobilized for two days in one animal; but higher doses failed to show anything of the kind, and the testicular lesion is, naturally, subject to certain fluctuations.

As is evident from the results recorded in Table 2, it is impossible to demonstrate any spirillicidal action for sodium cacodylate in infected rabbits short of seriously injuring or killing the animal. Hence "C" cannot be given any value, and the ratio C: T, or 0/0.2, signifies no specific action.

COMMENTS

Of course facts gained from experiments on animals often cannot be directly transferred to human medicine; but much of our knowledge about salvarsan and other experimental substances has been so transferred and no reason is apparent why sodium cacodylate should be an exception. Dawes and Jackson[5] have shown that any therapeutic effect sodium cacodylate may have is due really to decomposition and reduction products such as cacodyl, arsenious and arsenic acids. The amount of reduction depends largely on personal idiosyncrasy, and in this way a very uncertain element is introduced. It is possible that more reduction is effected by several small subcutaneous or intramuscular injections than by a single large intravenous injection, and that the nascent acids may have some favorable action on the tissue reactions to the spirochetes, or even on the spirochetes themselves; but it is fair to conclude that neither sodium cacodylate nor its reduction products have any considerable spirillicidal action. Their organotropic properties are fully as strong as their parasitotropic properties. Many substances which had a ratio of 1 to 2 or less were discarded as useless in the elaboration of salvarsan.

For all practical purposes salvarsan should be regarded as a new substance and not merely as a new arsenical compound. The arsenic is only a part of a complicated instrument and would be of little value alone. The arsenic must be reduced, trivalent and in firm combination with the benzol ring; and the benzol ring must be substituted with the OH group and the NH_2 group in the *ortho*-position before a maximum destruction of spirochetes is possible. From this point of view, sodium cacodylate has no more relation to salvarsan than a pair of artery forceps has to a lithotrite in the extraction of a stone from the bladder.

RESISTANCE TO TREATMENT

When sodium cacodylate was first used, it was feared in some quarters that the spirochetes might become resistant to arsenic and fail to respond to a later treatment with salvarsan. So far this has not materialized, and, from the absence of effect on the spirochetes shown in the preceding experiments, it is not likely to be realized. The spirochetes in lesions of several rabbits which had been treated with sodium cacodylate have promptly disappeared after a subsequent treatment with salvarsan in ordinary doses of 0.01 gm. per kg. In the following case, the spirochetes also behaved similarly.

The case was under the care of Dr. M. D'Arcy Magee of Washington, who kindly furnished the following data:

A man, aged 22, date of whose infection was uncertain, had primary lesion and secondary eruption in July, 1910; was given inunctions of mercury and potassium iodid for two months. The patient was seen by Dr. Magee Sept. 27, 1910; there were numerous mucous patches in mouth, scaling syphilids of palms and soles of feet and general glandular enlargement. Sodium cacodylate was given by intramuscular injection up to 18 grains, extending over about a month. The doses were of ½ grain daily at first and then, after a short intermission 1 grain daily. Toward the end of the treatment the patient's breath had a strong odor of garlic. The lesions of the palms and soles improved considerably but the patches remained unchanged. I saw the patient Nov. 14, 1910; spirochetes were found in the mucous patches of the mouth by the dark-ground microscope; serum taken on this day was positive by the Wassermann reaction. November 16, 0.5 gm. salvarsan was given by injection of the alkaline solution in each buttock. November 23, mucous patches healed. November 29, serum weak; hands and feet clean. December 5, gain of 5 pounds since November 30. December 14, serum weak. December 19, serum negative, thirty-three days after injection. The patient has gone to work for first time in four months.

Hence, while there is no indication for the use of sodium cacodylate in syphilis on experimental grounds, it apparently does not interfere with a subsequent treatment with salvarsan.

CONCLUSION

As is noted above, Hata found that the ratio C:T for rabbits was 1:10 for intravenous administration of a single dose. It is probable that for human medicine the ratio is somewhat greater, because in the rabbit the disease is confined to the testicles or scrotum and the spirochetal content of the body cannot be as great as it is in a generalized infection in man. Now we know that, other things being equal, the curative dose varies with the number of spirochetes present; but as destruction is definite at 1 to 10 or in some cases even at 1 to 20, there is good reason to believe, both on experimental and clinical grounds, that a ratio of 1 to 5, or 1 to 2, will suffice to kill all spirochetes in the human body. In some early cases of syphilis patients have beyond reasonable doubt been cured by doses of from 0.3 to 0.6 gm. and 1.2 gm. has been given without ill effects.

At the present time it may be taken for granted that salvarsan is a specific against syphilis and the important question now is: What is the best dose and best method of administration for a given stage of the disease? There is considerable evidence to show that the size of the dose should vary inversely with the duration of the disease. The original Alt method of injecting the alkaline solution intramuscularly seems to hold its own for certainty in results. The Wechselmann method, or the subcutaneous injection of the neutral suspension, has lost much of its vogue on account of slow absorption and liability to necrosis of the tissues. One or more intravenous injections, in some cases, seems to be too brief in action; but observations extending over months are needed on all these points. In Ehrlich's words, "The indications at the present time are not to scatter our

5. Dawes and Jackson: Physiologic Action, Elimination and Therapeutic Application of Sodium Cacodylate, Used Hypodermatically, THE JOURNAL A. M. A., June 22, 1907, p. 2090.

strength in trying out new substances but to concentrate all our efforts on improving the method of administration, on strictest asepsis, on carefully increasing the dose, on repeating the treatment and finding suitable adjuvants, in order constantly to approach more nearly to the ideal of *therapia magna sterilisans.*"

SUMMARY

1. Sodium cacodylate has no spirillicidal action in rabbits infected with *Spirochæta pallida* when tested by Ehrlich and Hata's technic.
2. Treatment with sodium cacodylate does not interfere with a subsequent treatment with salvarsan.
3. The most important question in the treatment of syphilis to-day is, "What is the most suitable dose and what is the most efficient method of administration of salvarsan in a given stage of the disease?

TRANSMISSION EXPERIMENTS WITH THE VIRUS OF POLIOMYELITIS

FINDING THE VIRUS IN THE NASOPHARYNGEAL MUCOSA OF MONKEYS RECOVERED FROM THE ACUTE STAGE *

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AND
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The findings which are recorded in the following protocols and charts came out in an investigation for which we received our original material (virus) from Dr. Flexner and Dr. Lewis, whose encouragement and advice have made this work possible. This investigation is being carried on for the purpose of determining some means of early diagnosis and of the treatment for this condition both in the way of prophylaxis and also during the acute stage. If successful in keeping the subjects alive, we hoped that some light might be thrown on the late treatment of the paralyzed muscles. In a more complete report which is shortly to follow, these questions will be more fully discussed.

In the attempt at keeping the paralyzed monkeys alive success was only partially obtained. For this partial success we are largely indebted to our laboratory assistant, Mr. J. S. Winslow. We have been able to keep four monkeys alive ranging from six weeks to five and a half months. In these cases we feel sure that death was not due directly to the paralysis, but was in most cases due to intercurrent affections and especially to inanition.

The important results deal with Monkey 17 and the series inoculated from the nasopharyngeal mucosa of this monkey, and also with Monkey 54 and the series inoculated from the nasal mucosa of this monkey, and finally with Monkey 6 and its series.

PROTOCOLS OF EXPERIMENTS

MONKEY 17.—This monkey received 4 c.c. of virus K (Flexner and Lewis) on June 1, 1910. The first symptoms of paralysis appeared on June 9; complete paralysis by June 11. The paralysis had begun to improve on July 15, when there was marked improvement in both fore and hind limbs. This monkey lived throughout the summer and had recovered to such an extent that he could feed himself with considerable ease. He could almost turn himself, but could not stand or walk. Early in November his appetite failed, and he died on November 8. Complete necropsy by the Department of Neuropathology showed no intercurrent disease. The nasopharyngeal mucous membrane was removed under careful precautions; was ground up in sterile salt solution and passed through a Berkefeld filter, the resulting amount being 10 c.c. of filtrate. Nine c.c. of this filtrate from the nasopharyngeal mucous membrane were passed by the intercerebral route into two monkeys.

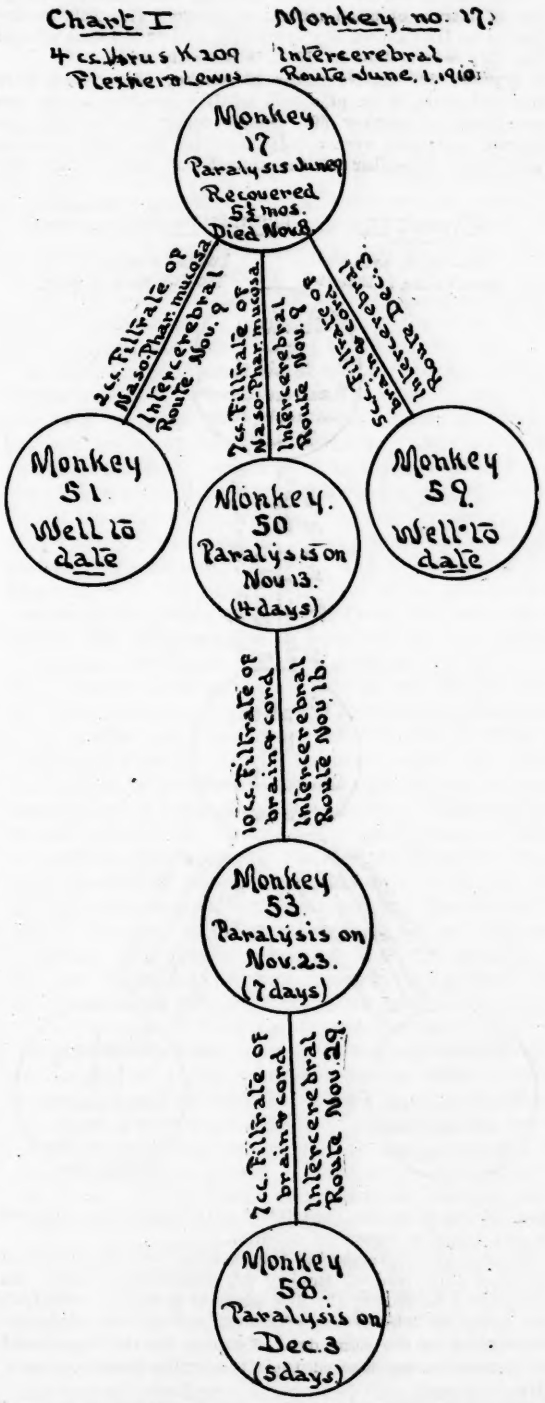
Chart I
Monkey no. 17.
4 cc. Virus K 209 Flexner-Lewis
Intercerebral Route June. 1. 1910.
Monkey 17 Paralysis June 9 Recovered 5½ mos. Died Nov. 8
2 cc. Filtrate of Naso-Phar. mucosa Intercerebral Route Nov. 9
7 cc. Filtrate of Naso-Phar. mucosa Intercerebral Route Nov. 9
5 cc. Filtrate of brain & cord Intercerebral Route Dec.
Monkey 51 Well to date
Monkey 50 Paralysis on Nov 13. (4 days)
Monkey 59. Well to date
10 cc. Filtrate of brain & cord Intercerebral Route Nov 15.
Monkey 53 Paralysis on Nov. 23. (7 days)
7 cc. Filtrate of brain & cord Intercerebral Route Nov. 29.
Monkey 58. Paralysis on Dec. 3 (5 days)

MONKEY 50.—This animal received 7 c.c. of nasopharyngeal membrane filtrate of Monkey 17, Nov. 9, 1910. The first symptoms appeared on November 13 (four days). There was no

* From the Department of Surgical Research, Harvard Medical School. Work done under a grant from the Proctor Fund.

paralysis noted. The monkey, however, showed the characteristic nervous prodromal symptoms. He died during the night and necropsy performed early November 14 by the Department of Neuropathology showed typical selective lesions of myelitis.

MONKEY 51.—This monkey received, intercerebral route, 2 c.c. of filtrate of nasal mucosa of Monkey 17. This monkey has at no time shown any symptoms, and at the time of writing this report, Jan. 13, 1911, is perfectly well.

MONKEY 53.—On November 16 Monkey 53 received, intercerebral route, 6 c.c. of a salt solution emulsion of the cord and brain of Monkey 50. On November 22, the first prodromal symptoms were noted; November 23, typical complete paralysis. November 23, the animal was killed by etherization. Necropsy by the Department of Neuropathology showed typical selective lesions of myelitis.

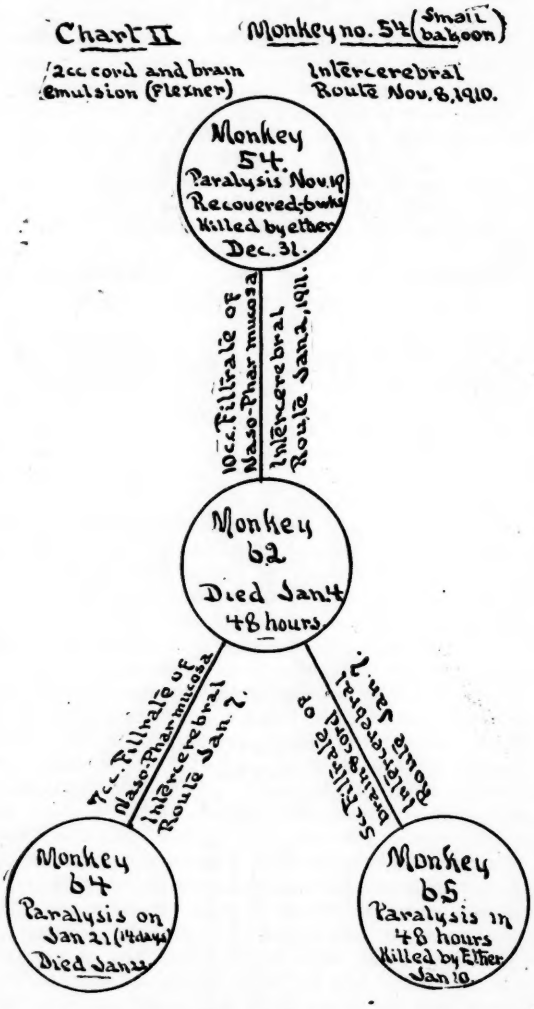
Chart II
Monkey no. 54 (small baboon)
2cc cord and brain Emulsion (Flexner)
Intercerebral Route Nov. 8, 1910.
Monkey 54. Paralysis Nov. 19 Recovered; Bowls Killed by ether Dec. 31.
10cc. Filtrate of Naso-Phar mucosa Intercerebral Route Jan. 2, 1911.
Monkey 62 Died Jan 4 48 hours
7cc. Filtrate of Naso-Phar mucosa Intercerebral Route Jan. 7.
5cc. Filtrate of Brain & cord Intercerebral Route Jan. 7
Monkey 64 Paralysis on Jan 21 (14 days) Died Jan 22
Monkey 65 Paralysis in 48 hours Killed by Ether Jan 10.

MONKEY 58.—November 29 this monkey was given 6 c.c. of emulsion from cord of Monkey 53, intercerebral route. On December 3 he showed the first signs of paralysis. Paralysis was complete late in the afternoon and he was killed by etherization on the same day. Necropsy by the Department of Neuropathology showed typical selective lesions of myelitis.

MONKEY 59.—December 3, 5 c.c. of the filtrate of the cord of Monkey 17, which had been preserved in equal parts of glycerin and salt solution was given by the intercerebral route. There have been no symptoms from this monkey at any time.

MONKEY 54.—This was a small baboon which had been sent to us from Springfield, Mass., for the purpose of studying what was supposedly a spontaneous paralysis which had occurred in 1908. This baboon showed marked weakness of her hind legs; she could not jump, but could climb in a fairly active, though clumsy way. She was given an intercerebral injection on November 8 of 2 c.c. of a 5 per cent. emulsion in salt solution which we had obtained from Dr. Flexner on November 5. The first signs of paralysis appeared on November 19. The monkey was kept alive until December 31, when on account of inanition she was etherized and her nasopharyngeal mucous membrane removed under careful precautions, ground up and passed through a Berkefeld filter. This monkey at autopsy showed a well-marked softening of the gray matter, especially of the anterior horns of the cord.

MONKEY 62.—This monkey was given 10 c.c. of the filtrate from the nasopharyngeal mucous membrane of Monkey 54 on the morning of January 2. January 3, in the afternoon, Monkey 62 first showed the prodromal restlessness and was apparently very sensitive and was having slight tetanic movements. There was no paralysis at this time and he could move about his cage. January 4, in the morning, he was found unable to get up. Paralysis, however, was not present so far as we could make out, though both fore and hind legs were held tonically contracted. During the morning the monkey had respiratory failure and died rather suddenly. Necropsy by the Department of Neuropathology showed in the brain hemorrhages in the meshes of the pia with a moderate number of polynuclear leukocytes and a mononuclear cell infiltration in the medulla. The meninges at focal points showed intense infiltration with various cells, polynuclear, mononuclear, endothelial cells, etc. In the substance of the medulla the glia cells showed a slight reaction to acute ganglion cell changes. There were a few scattered hemorrhages. The cerebrospinal fluid taken at the time of autopsy showed a large number of polynuclear leukocytes, compound granular cells, lymphocytes, etc. The nasopharyngeal mucous membranes were removed under careful precautions and passed through a Berkefeld filter. The cord and brain were also emulsified and passed through a Berkefeld filter.

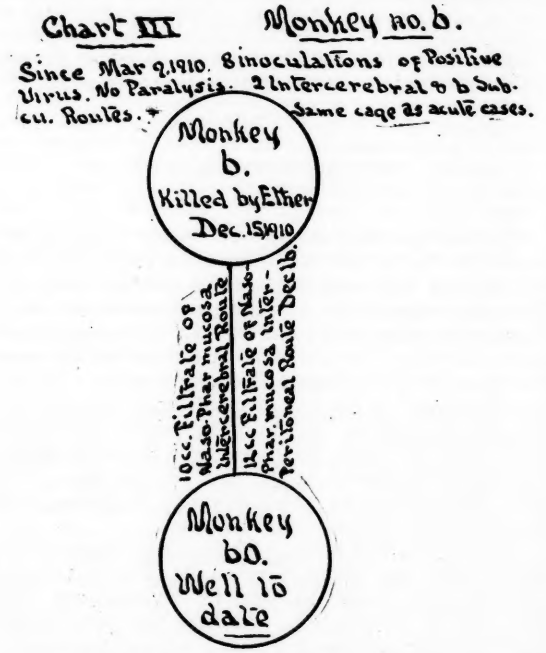
Chart III
Monkey no. b.
Since Mar 9, 1910. 8 inoculations of Positive Virus. No Paralysis. 2 Intercerebral 6 b Subcu. Routes.
Same cage as acute cases.
Monkey b. Killed by Ether Dec. 15, 1910
10cc. Filtrate of Naso-Phar mucosa Intercerebral Route
12cc Filtrate of Naso-Phar mucosa Intraperitoneal Route Dec 15.
Monkey 60. Well to date

MONKEY 64.—On January 7 this monkey received 7 c.c. of the nasopharyngeal mucous membrane of Monkey 62. On January 21 the first symptoms of paralysis appeared. The monkey was found in the morning in a very weakened condition, which rapidly progressed until there was a complete paralysis with slight respiratory movement. The monkey lived for twenty-four hours in this practically moribund condition,

and died January 22, when a necropsy was performed by the Department of Neuropathology, which showed in the cord degeneration of the ganglion cells, the glia cells were markedly increased and the small blood-vessels were very prominent.

MONKEY 65.—On January 7 this monkey was given 5 c.c. of the filtrate from the cord of Monkey 62. January 9 there was complete paralysis. January 10 the monkey was killed by etherization because of marked respiratory difficulties. Necropsy by the Department of Neuropathology showed acute regressive changes in the ganglion cells and an increase of the glia elements in the gray matter of the cord.

MONKEY 6.—This was a monkey of our first lot; he received 3 c.c. of virus MA (Flexner and Lewis) by the intercerebral route on March 9, 1910. On March 22 there was a marked drop in his white count from an average of 26,000 to 14,000, which in the light of other findings might possibly be considered as a prodromal symptom; otherwise there were no symptoms from the inoculation. During April and May this monkey received 25 c.c. of a thick emulsion of cord and brain from positive cases in monkeys. This was for the purpose of creating antibodies. At no time were there any symptoms from these inoculations. This monkey was also allowed to live in the cage where several of the monkeys came down with their acute attacks, and drank out of the same cup during the acute onset with one or more monkeys. He at no time showed any symptoms. He was killed by etherization on December 15 and his nasopharyngeal mucous membrane removed under careful precautions and passed through a Berkefeld filter.

MONKEY 60.—December 16 this monkey was given 10 c.c. of filtrate from the nasopharyngeal mucosa of Monkey 6 by the intercerebral route. He was also given 12 c.c. of the same filtrate intraperitoneally. There have been no symptoms up to the present time.

These experiments, therefore, show that it was possible to transmit from monkey to monkey a typical poliomyelitis from the filtrate of the nasopharyngeal mucosa of two monkeys dying without other discoverable infections respectively six weeks and five and a half months after the acute stage of the disease. In one case we have been able to transmit the disease from the nasopharyngeal mucosa of a monkey dying in the acute stage. In these experiments it has been impossible to transmit the disease from monkey to monkey by intercerebral inoculation of the cord and brain of these recovered subjects or from filtrates of the nasopharyngeal mucosa of a monkey in apparent good health, which had received a previous intercerebral inoculation of an active virus with only questionable prodromal symptoms, but which had lived in closest contact with monkeys in the acute stage of the disease.

That the virus of poliomyelitis is contained in the nasopharyngeal mucosa of inoculated monkeys was pointed out by Flexner and Lewis,[1] who regarded this membrane as a possible route of spontaneous infection in man.[2] The virus had previously been demonstrated solely in the mucous membrane of recently inoculated animals. The observations recorded here indicate that the virus of poliomyelitis can persist in a viable and infectious state in the nasopharyngeal mucous membrane in the monkey for several months after the acute period of paralysis has passed, and for a far greater period of time than it survives in the central nervous system.

We have noted no case of transmission from monkey to monkey except by direct inoculation, although closest association with subjects in the acute stage has been maintained both by contact and the use of the same feeding utensils and material.

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1. Flexner, S., and Lewis, P. A.: THE JOURNAL A. M. A., Feb. 12, 1910, p. 535.
2. Flexner, S.: The Contribution of Experimental to Human Poliomyelitis, THE JOURNAL A. M. A., Sept. 24, 1910, p. 1105.

THE FUNCTIONS OF THE STOMACH IN DIABETES MELLITUS

WITH SPECIAL REFERENCE TO THE DETERMINATION OF PEPSIN*

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It has been known for some time that the motility of the stomach is usually increased and that the gastric secretion is frequently diminished in diabetes mellitus. In pancreatic diabetes the ferments or zymogens are, according to those who have studied them, frequently affected; the pancreatic ferment, the muscular ferment, and the glycolytic ferment are deficient, suppressed or not activated, and glucose does not undergo combustion, but is excreted in the urine.

The few cases that form the basis of this paper were studied with the object of investigating the secretion of pepsin in patients with diabetes mellitus.

As diabetes mellitus is not a common disease, and as digestion is usually good in diabetic patients, one does not have occasion to examine the functions of the stomach in many of these patients. Some of these patients, however, complain of stomach distress, and some other patients have stomach disease, although they do not have any subjective symptoms of dyspepsia. One of the patients whose case is here reported had catarrhal gastritis, one catarrhal gastritis and dilatation of the stomach, with retention, and one other patient had marked gastroptosis; only one of these, the last, sought advice for dyspepsia or complained of indigestion. Altogether, twenty-two test breakfasts or full test meals were given to these seven patients. It was learned early that one could not wait forty-five minutes to aspirate the stomach after an Ewald test breakfast, but in order to obtain any stomach contents for examination the aspiration had to be performed in thirty minutes, and in some instances at the end of twenty minutes. This was true in the case of L. W., who had gastroptosis. Three attempts to obtain gastric contents in forty-five, thirty and twenty-five minutes, respectively, failed, and the attempt was successful only on aspirating the stomach in twenty minutes, and then only 10 c.c. of contents were obtained. The patient refused further examination. It was also noted that in some instances the stomach was empty in two or two and a half hours after a full dinner.

In the case of S. B., on one examination after an Ewald test breakfast, very little material was obtained at the end of thirty minutes. On one other occasion, however, a pint of contents was aspirated at the end of three hours after a full dinner. At that time the patient was suffering from an increase in the severity of his symptoms, with a greater amount of glucose output in the urine. In the Ewald test breakfast, ordinary wheat bread was eaten; the full meals were those in which only foods permitted in diabetes mellitus were given.

Pepsin digestion was tested by the Mett method. Pieces of glass tubing 2 mm. in diameter containing the boiled white of egg were placed in the liquid to be tested—stomach contents 1.c.c. to 16 c.c. of one-twentieth normal hydrochloric acid—and this put in the incubator for twenty-four hours, after which the glass tubing containing the egg-white was removed and the digestion of egg read off under the microscope by using a mechanical stage. All of these specimens of gastric contents were

* From the Laboratory of Clinical Pathology, Philadelphia Polyclinic and College for Graduates in Medicine.

controlled by testing at the same time other specimens of gastric contents known to contain pepsin.

Eighteen tests for pepsin were made on the gastric contents of six patients, as shown below. In one, no pepsin was found; in one, although there was a high hydrochloric acid content, in five different analyses, two showed no pepsin digestion; and of the other three tests the digestion was 0.1 mm. In one patient there was a vigorous pepsin digestion; in two other cases the pepsin was somewhat reduced. While in one patient, A. C., the gastric contents were examined three times after an Ewald test breakfast, and three times after a full dinner pepsin was not found in the first five examinations, but a good pepsin digestion was found on the sixth examination. This was after a full dinner.

A short note of the history of each case is here appended.

CASE 1.—Patient, L. W., female, aged 65; born in Germany. Gastroptosis and diabetes mellitus. Amount of glucose in urine, 3.1 per cent. Ewald test breakfast aspirated at end of different periods showed as follows: At the end of forty-five minutes, no contents obtained; at end of thirty minutes only a few drops obtained on end of tube; at end of twenty-five minutes only a few drops obtained on end of tube; at end of twenty minutes 10 c.c. obtained; total acidity 90; free hydrochloric acid 48; pepsin not determined.

CASE 2.—Patient, A. C., female, aged 45; born in Russia; patient kindly sent to me by Dr. A. A. Eshner.

Glucose in urine, 1.8 per cent.

Nov. 18, 1908: Ewald test breakfast; aspirated in forty-five minutes, nothing obtained.

Nov. 23, 1908: Ewald test breakfast; aspirated in thirty minutes, 20 c.c., total acidity 4; no free hydrochloric acid; no pepsin.

Nov. 30, 1908: Full dinner; aspirated in three hours, nothing; no lactic acid; no Oppler-Boas bacilli found; no pepsin.

Dec. 14, 1908: Full dinner; aspirated in two and one-half hours, 30 c.c., total acidity 10; no free hydrochloric acid; no pepsin.

Dec. 21, 1908: Ewald test breakfast; aspirated in thirty minutes; 4 c.c., total acidity 6; no free hydrochloric acid; no pepsin.

Dec. 28, 1908; full dinner; aspirated in two and one-half hours; 20 c.c.; total acidity 10; no free hydrochloric acid; 2.7 mm. pepsin.

Pepsin absent after five examinations; present on the sixth.

CASE 3.—Patient, H. C., male; aged 39; born in Russia; kindly sent to me by Dr. David Riesman. Glucose in urine, 2.8 to 3.2 per cent.

Feb. 5, 1909: Ewald test breakfast, aspirated in forty-five minutes; 150 c.c.; total acidity 38; free hydrochloric acid 28; 4.2 mm. pepsin; digestion good; considerable mucus present.

Feb. 17, 1909: Full dinner; aspirated at end of three hours; 1 pint; total acidity 44; free hydrochloric acid 26; 4.1 mm. pepsin. Gastric contents contained a great deal of mucus.

CASE 4.—Patient, F. S., female; age 37; born in Russia. Dr. David Riesman permitted me to examine this patient. Diabetes mellitus; lacerated cervix and perineum. Glucose in urine from + to 7 per cent.

Feb. 16, 1909: Ewald test breakfast aspirated in thirty minutes; 20 c.c.; total acidity 76; free hydrochloric acid 36; 2. mm. pepsin.

CASE 5.—Patient, D. C., female; aged 40; born in Russia. Kindly sent to me by Dr. David Riesman. Glucose in urine 2.35 per cent.

Dec. 1, 1909: Patient ate a full dinner at noon. This not being known, she was given an Ewald test breakfast at 1.45 p. m. Aspirated in forty minutes; 15 c.c.; total acidity 27; no free hydrochloric acid; pepsin 2.4 mm.

Dec. 8, 1909: Full dinner at 1 o'clock; aspirated at end of one hour and forty minutes; 30 c.c. very thick contents containing a great deal of mucus; total acidity 40; no free hydrochloric acid; pepsin 2.1 mm.

CASE 6.—Patient, C. L., female; aged 56; born in Russia; kindly sent to me by Dr. A. A. Eshner. Glucose in urine, 3.75 per cent.

Aug. 29, 1910: Full dinner, aspirated at end of two hours and forty minutes; 20 c.c.; total acidity 50; no free hydrochloric acid; no pepsin.

Ewald test breakfast, aspirated after thirty minutes; 10 c.c.; total acidity 46; no free hydrochloric acid; no pepsin.

CASE 7.—Patient, S. B., male; aged 21; born in Russia; kindly sent to me by Dr. A. A. Eshner. Glucose in urine 4.16 per cent.

Ewald test breakfast: aspirated after forty-five minutes; 45 c.c.; total acidity 86; free hydrochloric acid 50; pepsin 0.1 mm.

Full dinner: aspirated after two hours and forty minutes; 300 c.c.; total acidity 66; free hydrochloric acid 48; no pepsin.

Ewald test breakfast: aspirated after thirty minutes; 10 c.c.; total acidity 90; free hydrochloric acid 50; no pepsin.

Full dinner: aspirated after three hours; 40 c.c.; total acidity 99; free hydrochloric acid 50; 0.1 mm. pepsin.

Full dinner: aspirated after three hours; 1 pint; total acidity 96; free hydrochloric acid 60; 0.1 mm. pepsin.

TABLE OF EXAMINATIONS *

Case No.	Patient	Tests No.	Pepsin† +	Pepsin† —	T. A.	Free HCL	Pepsin mm.
1	L. W.	.	.	.	90	48	‡
2	A. C.	6	1	5	10	0	2.7
3	H. C.	2	2	.	44	28	4.1
4	F. S.	1	1	.	76	36	2.0
5	D. C.	2	2	.	27	0	2.4
6	C. L.	2	.	2	40	0	0.0
7	S. B.	5	3	2	99	60	0.1

* No lactic acid present in any case.
† Plus column, number of times present; minus column, number of times absent.
‡ Not determined.

The total acidity and the amount of free hydrochloric acid were also determined, and tests were made for lactic acid when free hydrochloric acid was absent. No lactic acid was found. The total acidity was high in three cases and the free hydrochloric acid was high in four. Hydrochloric acid was absent in three.

It has been shown by Riegel and others that hydrochloric acid may be absent from the stomach contents for long periods of time in this disease and then reappear. Honigmann ascribed the lack of free hydrochloric acid to the increased motility of the stomach. Rosenstein was of the opinion that if free hydrochloric acid was permanently absent, it was due to atrophy of the glandular apparatus of the stomach, caused by interstitial inflammation of the gastric mucosa. Autopsy on these latter cases, however, failed to prove this view to be correct.

It is also believed that in those cases in which there is a temporary absence of free hydrochloric acid in the stomach contents the cause is a neurosis. As most of these patients have arteriosclerosis, it is possible that this condition may also have a part in the stomach functions in this disease.

In the few cases here reported it is shown that the absence of free hydrochloric acid in diabetes mellitus, as in other diseases, does not mean an absence of pepsin. On the other hand, it is also shown that a high percentage of hydrochloric acid does not indicate a good pepsin digestion.

A pepsin digestion of between 3 and 4 mm. is in my experience about the average in non-diabetic patients.

While one cannot draw any general conclusions from a small number of cases, it may be said that secretion of pepsin in diabetes mellitus is frequently reduced and sometimes absent; this observation may be added to the

facts already mentioned and long known; i. e., the gastric motility is usually increased and the gastric secretion is frequently diminished in this disease.

In conclusion I wish to thank Drs. Eshner and Riesman for sending their patients to me for study and Dr. Farr for permission to examine them in his clinic.

1934 Chestnut Street.

THE ADVANTAGES OF NITROUS OXID-OXYGEN ANESTHESIA ESPECIALLY IN CONNECTION WITH ULTIMATE RECOVERY *

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As the aim of the surgeon is to record a "successful operation," not only from a scientific point of view, but from the patient's standpoint as well, the selection and administration of the anesthetic becomes more and more a matter for consideration as this branch of medical science is developed.

Until recent years the dangers of the anesthetic were considered solely those occurring on the operating-table, but laboratory investigation has established, beyond the possibility of a doubt, that a percentage of surgical mortality, heretofore considered to be due to the patient's condition, effects of the operation, etc., is sometimes due directly to the effects of the anesthetic, even though death occurs remotely from the time of the operation. Careful and extended clinical observation on nitrous oxid-oxygen anesthesia in several thousand cases, by some of the most talented surgeons of this country, completely verifies this conclusion.

The use of nitrous oxid as an anesthetic agent presents an interesting and a very peculiar history, which I shall not attempt to detail here. To Andrews, of Chicago, belongs the credit of discovering that by the addition of the proper amount of oxygen, the asphyxial symptoms of nitrous oxid are prevented without destroying its anesthetic properties.

Since this discovery was made, over forty years ago, nitrous oxid-oxygen has slowly, intermittently, but very persistently gained recognition until to-day it occupies the meritorious position of being endorsed by one of the largest and greatest scientific societies of the world, as being, all effects considered, the best means for producing anesthesia that is known.

There is a prevalent idea that nitrous oxid-oxygen is better adapted for minor surgery and short operations than for major work. This is an erroneous impression, however, for the longer this anesthesia is maintained, the better it becomes in every way. I myself have administered it throughout practically the whole range of operative procedure from a simple incision to difficult and complicated operations lasting over four hours, which is the longest period, as far as I know, wherein this anesthetic has ever been continuously administered. Dr. Frederick Hewitt, of London, a leading authority on anesthetics, says:

> There is no form of anesthesia at present known which is so devoid of danger as that which results from nitrous oxid when administered with a sufficient percentage of oxygen to prevent all asphyxial complications.

The Anesthesia Commission of the American Medical Association reported at its last session in St. Louis as follows:

> As a routine anesthetic nitrous oxid has a peculiar value, . . . (and) in the hands of highly skilled anesthetists the method is the best yet devised.

These statements are corroborated by such practical surgeons as Crile, Meyer, Kelley, Halsted and Bevan, who collectively have certainly used it in thousands of cases, and are therefore in a position to express an opinion of value as to its superior influence toward ultimate recovery.

There is much less surgical shock and postanesthetic nausea and depression with nitrous oxid than with ether or chloroform; the patient regains consciousness very quickly, and, being less depressed, recovers from the effects of the operation sooner and better.

Hamburger and Ewing, who have made an extended laboratory investigation of the effects of the narcosis produced by nitrous oxid, chloroform and ether on the blood, and whose findings are published as a part of the preliminary report of the Anesthesia Commission of the American Medical Association, say, as regards ether:

> The color index shows a rather constant drop, starting immediately after anesthesia and reaching its lowest point on the fifth and sixth days. This would indicate a relative loss of hemoglobin per cell, and again is unlike nitrous oxid results, in which the only sign of a low color index is found immediately after the anesthetic mask is removed, and which is completely gone in two hours.
>
> The volume index likewise shows an immediate loss, which is most marked in twenty-four hours, and again on the fifth to seventh days. In nitrous oxid readings the percentage volume remained unchanged throughout.

According to these investigators so short an anesthesia as fifteen minutes with ether causes a definite and demonstrable anemia, and such an effect as this, which does not begin to improve till after the fifth day, must certainly retard convalescence even in favorable cases, and in critical cases may be the determining factor in producing a fatal termination.

Chloroform produces even more destructive changes on the blood than does ether, while its degenerative action on the liver has been mentioned by so many writers that this serious and remote effect needs merely to be mentioned here.

For some time it has been recognized that ether increases the toxemia arising from infection. Recent investigation shows that this is due to the fact that ether impedes the functional activity of the leukocytes: that is, it lessens the patient's resisting power against the infection, whereas nitrous oxid exerts no such injurious effect on the blood-cells, and consequently does not lower the patient's immunity, which naturally exists. In serious cases of infection, as well as in the "borderland" cases in general, the difference in ultimate recovery under the two anesthetics is strikingly shown.

Numerous surgeons have advised against the use of ether in tuberculous conditions, as, in their experience, it causes new foci of infection to develop. This, however, is only a particular instance of the general effect produced, for, no matter what the infection may be, the toxic effect of ether on the leukocytes lessens the efficiency of Nature's effort to combat the invading host.

As is well known, ether is an irritant to the respiratory mucous membrane and to the kidneys, whereas

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* Read before the New York Academy of Medicine, Section on Orthopedic Surgery, Nov. 18, 1910.

nitrous oxid is without deleterious effect on these tissues, and is therefore strongly indicated as the anesthetic agent whenever these structures are involved, no matter what the operation may be, as in tuberculosis, pneumonia, bronchitis, laryngitis, nephritis, diabetes, pyelitis, and a host of other inflammations and infections of the respiratory and genito-urinary tracts. In fact, when you take into consideration the lessened amount of surgical shock and of postoperative discomfort and depression, the absolutely non-irritant action on the mucous membranes of the tracts involved in its administration and elimination, and the blood elements left unimpaired, its range of usefulness is so broad that it should be the anesthetic of choice, except in instances in which it is specially contra-indicated. Besides, when this anesthetic is used, there is less liability of infection occurring during, or subsequent to the operation, inasmuch as the patient is less depressed, and natural immunity undisturbed. These are practical points which every operator should carefully consider, as they are important elements, no matter how trivial each may at first appear, when considered separately, for, taken collectively, they most certainly affect the postoperative condition in every case.

It is readily granted that in the hands of the skilled anesthetist there is very little immediate danger in the use of the other anesthetics, and that, in such hands, the immediate mortality is very low indeed; but is it fair to conclude that the remote effects, much more subtle in their influence, and therefore much more difficult of detection, are consequently *nil*? Take, for instance, a case of grave infection; one of the other general anesthetics is faultlessly administered, but the surgeon's mortality is increased, and every surgeon of wide experience encounters some such cases. In the light of this research can it be said that the anesthetic did not contribute to the fatal result, or that the patient might not have been saved had a less toxic and less depressing agent, and one which did not lessen the patient's natural resisting power, and decrease the life-sustaining function of the blood-cells, been used? It is not contended that this form of anesthesia saves all patients of this class, but, in the language of Crile, "Not a patient showed the rapid march to fatality immediately following the operation which occasionally follows ether." Why the conspicuous absence of that "rapid march to fatality?" Simply because the patient is given a new and firmer hold on life, enabling some to recover that otherwise would simply increase the mortality. I very readily assent to the observation of Gatch that "very sick patients, with a rapid pulse and quick, shallow respiration, actually seem benefited by this form of anesthesia." That is, such patients will, during an operation under this anesthesia lasting for forty-five minutes to an hour, manifest a distinct improvement in the rate and quality of the circulation and respiration, both during and subsequent to the operation, the effect being quite permanent, as it is not a mere stimulant.

From the patient's point of view the lessened amount of postoperative discomfort alone is sufficient to call for this anesthetic, as he usually dreads the subsequent nausea, vomiting and depression more than the effects of the operation itself. Besides, when a patient can be told that he is simply to be given "laughing-gas" it allays to a very great extent the fear and dread of the anesthetic, and many patients will submit to operations under this agent who would otherwise refuse all operative intervention.

It is a matter of no little comfort to the patient and to his family to know that complete consciousness returns so quickly after the operation is completed, and especially is this so, when, as in the majority of cases, there is freedom from postnarcotic discomfort, and a pleasant impression is left on the mind by the "laughing-gas." For a patient to be returned from the amphitheater to his own room completely conscious, smiling and talking to his nurse and friends, even after a prolonged operation, presents a different picture from that usually seen with other anesthetics, and gives a distinct advantage in convalescene. I cite just one case to illustrate: Dr. X. of a neighboring state was anesthetized for a rectal operation, necessarily requiring deep anesthesia. Within a very short time after the administration of the anesthetic was stopped he opened his eyes and said with a smile to those in attendance: "Well, if you folks had as good a time as I did, you certainly enjoyed this operation." He had had a dream about being at a big fire. Some time afterwards he said in a private letter to me: "You simply make anesthesia a pleasure." To have an intelligent patient, and especially a practitioner of wide experience, consider the taking of the anesthetic as a genuine pleasure is certainly valuable testimony to the great advantage offered by this anesthetic.

It is almost imperative to use a preliminary hypodermic injection of morphin and atropin about one-half hour before the time of the operation, as this medication aids very materially in securing muscular relaxation. Besides, the patient recovers from this anesthesia so quickly that it is usually indicated for the postoperative pain alone. When it is used the patient's nerves are quieter and he approaches the operation with more confidence and less fear—an important element in every case. In that class of patients or operations, in which it is difficult to overcome muscular rigidity the addition of a very small amount of ether—not sufficient to give the ether after-effects—in conjunction with the nitrous oxid and oxygen will secure the necessary relaxation. Used in this way, nitrous oxid-oxygen is a pleasant anesthetic for even the most fastidious patient, fulfils the requirements of both minor and major surgery, and produces the lightest and least toxic general anesthesia yet discovered.

616 Madison Avenue.

PRIMARY SARCOMA OF THE STOMACH WITH AUTOPSY FINDINGS *

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Sarcomas of the stomach are rare, and, beyond the mention of this fact one finds little discussion of the subject in most text-books of pathology. Therefore, all cases which are substantiated by microscopical study should be reported so that our knowledge regarding the pathology and symptomatology of this condition may be increased. For these reasons I report the following case:

History.—The patient, E. R., a white woman aged 72, was in the services of Drs. J. E. Thornton and M. D. Lewis, of Columbia, Mo., and the following history was given me by the former. The patient's husband died of cancer of the face. She had been healthy until two years ago when she began to decline. About one year ago she began to suffer pain in the

* From the Pathological Laboratory, University of Missouri.

region of the spleen which gradually increased. She had been in bed only about one month. A tumor mass was palpable in the epigastric region. The patient was very anemic but quite fleshy. The clinical diagnosis was cancer.

Necropsy.—Woman, well preserved for her age. The hair of the head and pubis was gray. The skeletal system was moderately heavy and the musculature was light. The subcutaneous layer of adipose tissue was quite thick and of a good color. All of the thoracic and abdominal viscera were normal except the stomach. Involving the pyloric end of the stomach was an annular tumor measuring 5 inches in diameter and ½ an inch thick in places. The diffused tumor was covered with mucous membrane except for a surface measuring about 2 inches in diameter. The tumor was very firm and the cut surface was smooth and glistening white in color. There were no evidences of metastatic growths in the lymph-nodes or in any of the organs. Although the patient did not look especially "cancerous" and the gross findings were far from being typical for such a condition, a provisional diagnosis of carcinoma of the pylorus was made. The microscopic examination showed the tumor to be a small round-cell sarcoma. There was little stroma and many mitotic figures were present. In sections showing the mucous membrane the tumor cells could be seen invading the subepithelial connective tissue.

A good article on sarcomas of the intestinal tract with splendid compilation of statistics was written by Corner and Fairbank.[1] In the 178 reports of cases collected from the literature, fifty-eight cancers were of the stomach. There was only one portion affected more, the small intestines. There were sixty-five occurring in this region. Corner and Fairbank found the cases about equally divided as to sex, males twenty-six, females twenty-nine. The most common age was between 40 and 50 years. The youngest patient was 3½ years old and the oldest 78. They found 36 per cent. located at the pylorus. About 60 per cent. of gastric carcinomas are located at the pylorus. The following points given by them might be of value in differentiating sarcoma from carcinoma of the stomach: "The rapid course with marked anemia, the absence of hematemesis or gastric dilatation, the presence of a large tumor, and, possibly, the age of the patient." Of fifteen patients operated on, four were reported living after four, five, twelve and twenty-four months respectively since operation.

THE ADMINISTRATION OF SALVARSAN

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One-third by weight of salvarsan is arsenic, and therefore in administering 0.6 gm., which is an ordinary dose, we are giving the patient 0.2 gm. of arsenic, or fifty times the amount that in the usual pharmaceutic combinations would cause poisoning. It is through the genius of Ehrlich that a way has been found to give this enormous dose, and almost always without causing any disagreeable symptoms, with the exception of pain—and even pain may be eliminated by injecting the drug intravenously. That great care must be observed in giving it goes without saying.

The drug is put up as a dry powder, enclosed in glass tubes, and in this form is stable; at least I have never yet heard of any trouble arising from its decomposition in the tubes. In solution, however, it quickly decomposes; in simple water it forms an acid solution that lasts undecomposed for several hours, probably for a day. As an alkaline solution, however, it quickly decomposes, and shortly turns wine red. The drug is administered either suspended in oil or as a solution, and must be made up fresh at each time of using. I have never seen it suspended in oil, but Neisser has so given it, and has advised oil of sesame as the best oily medium.

The acid watery solution of the drug is very painful when injected, and should first be made either alkaline or neutral. The care and trouble attendant on dissolving, alkalinizing, and again neutralizing the drug, and the further trouble of injecting it either subcutaneously, intramuscularly, or intravenously, and the pain, and occasional local necrosis caused when given subcutaneously, have impelled clinicians to adopt numberless modifications in technic. The best results I have seen, however, have been attained by comparatively simple methods.

THE INTRAMUSCULAR INJECTION OF SALVARSAN

Alt was the first to employ the drug clinically, and his method, as I have seen it in Lesser's clinic, is painful, as all these methods are, but it is simple and effective, and has not up to the present, in Lesser's hands, caused necrosis or abscesses. He has so used it in a great many cases, but he always taps wood when he speaks of his good luck.

He first takes salvarsan, 0.5 or 0.6 gm., and warm water, 5 or 6 c.c., and mixes them together in a glass-stoppered, graduated glass cylinder with glass balls to facilitate solution. He then adds 3 c.c. of sodium hydroxid (4 per cent. sol.), and again shakes well, adding drop by drop more of the sodium hydroxid solution till the solution in the glass cylinder is nearly clear. Normal salt solution may be added up to the 10 c.c. mark, and this is then injected into the gluteus. This should not be repeated before four or six weeks have elapsed.

Needle used by Schreiber, having a bayonet bend in the shaft with a ribbed finger-hold for guiding the needle in intravenous injection, together with the two-way cock betweeen the needle and the barrel of the syringe.

The same solution may be injected subcutaneously, usually under one or other shoulder-blade. There is, of course, more risk of an ensuing necrosis when injecting subcutaneously, than when injecting intramuscularly into the gluteus. The gluteus seems to be especially fitted to receive insults.

THE INTRAVENOUS INJECTION OF SALVARSAN

If Ehrlich's ideas in regard to the sterilization of the body are to be carried out, there is no doubt that the intravenous is the only correct method of administering salvarsan, as in neither the subcutaneous nor the intramuscular method is it possible to tell how soon the dose will be absorbed. By the intravenous method the medicine is given in a manner that insures the rapid diffusion of the full dose, without running the risk of ensuing necrosis, or abscesses, or of chronic arsenical poisoning from prolonged absorption. As far as pain is concerned, there is only the insignificant prick of the needle.

1. Corner and Fairbank: Practitioner, 1904, lxxii, 810.

At the kind suggestion of Professor Ehrlich I went to Wiesbaden to see Professor Weintraud, and to Magdeburg to see Dr. Schreiber. The only practical difference between these two is that one employs pressure by gravity, while the other uses a specially constructed syringe. I shall give Dr. Schreiber's method, as it seemed to me to be superior in some rather important details.

THE PREPARATION OF THE SOLUTION FOR INJECTION

About 20 c.c. of warm distilled water are poured into a graduated glass cylinder of a capacity of 250 c.c. This cylinder should have a glass stopper.

The glass capsule containing the salvarsan powder is now wiped off with gauze soaked in alcohol, and then with gauze soaked in ether. After breaking the capsule, the powder is poured on the water in the graduated glass tube, the stopper put in, and the contents well shaken. There is no necessity of using glass balls here, as the quantity of water is ample to dissolve the salvarsan readily.

It is important not to reverse this procedure, for if the powder is poured into the tube first, and the water afterward, a gummy mass forms in the bottom that dissolves with difficulty. This solution should be light yellow, and perfectly clear. That it should be clear is a matter of very great importance, as it is highly necessary that no undissolved particles be present.

Now we have an acid solution in sterilized water of the contents of one tube, the quantity of which is usually 0.5 or 0.6 gm. If it is 0.5, the graduated tube should be filled up with water to the 50 c.c. mark; if 0.6, to the 60 c.c. mark, so that each 10 c.c. will represent 0.1 of the drug.

Dr. Schreiber usually gives 0.3 gm. of salvarsan to a woman, and 0.4 gm. to a man. If it is desired to give 0.4 he pours 40 c.c. of the acid solution into another graduate furnished with a glass stopper, and fills up to the 200 c.c. mark with warm sterilized water, and to this adds about 20 c.c. of normal sodium hydroxid solution. Normal sodium hydroxid solution is a 4 per cent. solution of sodium hydroxid in water. This should be added a little at a time, and each time a little is added the glass stopper should be put in, and the cylinder well shaken. At first a precipitate forms, that gradually disappears on the addition of more caustic soda solution. When the solution is again clear, it is alkaline and ready for injection.

The flask containing the sterilized distilled water for use in making the solutions should not be stoppered with cotton, but with gauze, as cotton fibers, falling into the fluid, might cause trouble.

SYRINGE FOR INJECTING

The best syringe for injecting is a glass Lüer of about 20 c.c. capacity. It should not have a metal plunger, as in that case the least blood may cause binding. A two-way cock is introduced between the needle and the barrel.

Dr. Schreiber has a special needle made with a bayonet bend in the shaft, and on this bend a ribbed finger-hold. The bayonet bend is to allow the needle to be more easily shoved along in the lumen of the vein. A rubber tube is fitted to the lateral outlet of the two-way cock.

INTRODUCTION OF THE NEEDLE

The arm is now laid out on a cushion, so as to lie flat and easy; a stout rubber tube is thrown around the middle of the upper arm and drawn tight enough to stop the flow of blood in the superficial veins, but not so tight as to impede the arterial supply, and fastened with artery forceps or a wooden clip. It is very necessary that the arm should lie easy and still. The seat of operation should be wiped off with gauze soaked in alcohol.

About 4 c.c. of normal salt solution are drawn into the syringe, so that by running the plunger forward the air may be expelled from the needle and from the rubber tube attached to the outlets of the two-way cock.

Now the needle is inserted through the skin over a vein, and run along into the vein. When the needle enters the vein a little blood flows back into the normal salt solution in the syringe. If the plunger is pressed forward, the salt solution entering the vein will distend it a little, and when it does so, the tourniquet band about the arm may be removed, and the vein will collapse.

The insertion of the needle is a very important step in the operation. For instance, by blood flowing back into the syringe, it is known that the needle has entered the vein. Weintraud insists that the blood should flow freely from the needle, but in his method the needle is first inserted into the vein, and afterward the rubber tube conveying the salvarsan solution from the funnel-like cylinder, is attached to it.

The syringe, still containing a little salt solution, and with its needle lying in the vein, is now ready for injecting the fluid, which is held in a glass beaker so that the rubber tube attached to the lateral opening of the two-way tap drops into it. The instrument is free of air so that there is no fear of air embolus. By turning the cock of the two-way tap, the salvarsan solution may be alternately sucked up into the syringe, and forced into the vein. When the salvarsan solution is almost exhausted, a little normal salt solution is thrown into the beaker, and also injected into the vein. This is to clear away any of the salvarsan solution that would otherwise trickle out into the tissues, on withdrawing the needle.

A very important matter in this part of the operation is the injection of the small quantity of normal salt solution, both before and after injecting the salvarsan. By injecting the normal salt solution at first, one makes sure that the needle is in the vein, for if it is not in the vein, the injected fluid makes a little infiltration in the subcutaneous tissue, while if it is in its proper position, the already distended vein grows a little larger. If this sign should fail, there is still a symptom showing that the needle is not in place, for as soon as a little of the salvarsan enters the subcutaneous tissue the patient will experience a burning pain, in which case the needle should be immediately withdrawn, and free bleeding induced from the punctured wound. Another vein should then be chosen for the injection. Any subcutaneous vein that can be distended may be chosen, and in fleshy women Dr. Schreiber has even injected into one at the wrist. Sometimes when the vein cannot be seen, it may be felt.

The fluid should be injected slowly, say in five or six minutes, so as to avoid sudden overloading of the circulatory system.

Although the description of the operation is long, tedious, and complicated, yet the performance is very simple, and the patients experience very little inconvenience. They should remain twenty-four hours in bed.

When I was in Magdeburg Dr. Schreiber had given intravenously one dose of salvarsan to each of 155 patients; he had given two doses to each of 622 patients; and intramuscularly he had given one dose to each of 83 patients; making a total of 860 patients treated. Up to that time, he told me, he had had no serious trouble consequent on the use of the drug, and this statement, from what I have seen of his clinic and his personality, I fully believe. That trouble may follow the use of this remedy goes without saying; we are dealing with arsenic.

Whichever method is adopted, all instruments should be carefully sterilized as the irritant metal and germs make a highly septic combination. Salvarsan is probably no more antiseptic than Fowler's solution, in which, as is well known, fungi will grow freely.

In making the solution, glass stoppers should be used for the cylinders, as cork stoppers in contact with sodium hydroxid solution make a brown fluid, which at least looks dirty.

If it is desired to neutralize the fluid for injection after it is alkalinized with sodium hydrate solution, this is best done by adding, drop by drop, a 1 per cent.

glacial acetic acid solution. The neutral point may be determined by letting a drop of the fluid fall from the tip of a glass rod on litmus paper.

If the more concentrated solution for intramuscular injection is desired, and glass balls are not obtainable, the powder may be rubbed up with water in a mortar. The glass balls, however, are preferable.

THE TREATMENT OF DRUG ADDICTION

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The statements which I made in my former article[1] concerning the efficacy of the treatment to obliterate the craving for narcotics have been confirmed, and this treatment is to-day the most successful method which I have yet found for the obliteration of the craving for morphin, opium, cocain, alcohol, or tobacco. I have endeavored to simplify the method, and have succeeded in some measure; the same combination of drugs is used, and only the details of their administration have been changed. The plan which I have found to be most effective, and most easily followed by others, is as follows:

The belladonna mixture of two parts 15 per cent. tincture of belladonna, and one part each of the fluid extracts of hyoscyamus and xanthoxylum, has proved itself an essential part of the treatment. When the 10 per cent. tincture of belladonna has been used, or when even a 12 per cent. tincture has been employed, the results obtained were not clear-cut, but left the patients with an indefinite nagging longing for their narcotic. It seems necessary to push this mixture to the physiologic tolerance of the belladonna. This tolerance, of course, varies with the individual, and some of the best results have been obtained with patients who could not tolerate as an hourly dose more than from 2 to 4 drops of this mixture while others easily tolerated from 18 to 20. It would seem, judging from clinical results, that there are some properties in this mixture which are necessary to a successful carrying out of the treatment. The bottle containing this mixture must be kept well corked, and shaken before using. The method which I now pursue is as follows:

A patient addicted to morphin is given five compound cathartic pills and 5 grains of blue mass, and six hours later, if these have not acted, they are followed by a saline; after three or four abundant movements of the bowels from these cathartics, the patient is given, in three divided doses at half-hour intervals, two-thirds of the total daily twenty-four-hour dose of morphin or opium to which he has been accustomed. Observe carefully after the second dose has been given, as the amount then equals four-ninths or nearly one-half the total twenty-four-hour dose. Some few patients cannot comfortably take more than this amount. At the same time with the morphin, 6 drops of the belladonna mixture is given in capsules. This belladonna mixture in doses of 6 drops (and by drops I do not mean minims, I mean drops dropped from an ordinary medicine dropper, which is about half a minim dose) is given every hour for six hours. At the end of six hours the dosage is increased 2 drops. The belladonna mixture is continued every hour of the day and every hour of the night continuously throughout the treatment, increasing 2 drops every six hours until 16 drops are taken, when it is continued at this dosage; it is diminished or discontinued at any time if the patient shows belladonna symptoms such as dilated pupils, dry throat or redness of the skin, or the peculiar and incisive and insistent voice, and insistence on one or two ideas. It is begun again at reduced dosage after the above symptoms have subsided.

At the tenth hour after the initial dose of morphin is given, the patient is again given five compound cathartic pills, and 5 grains of blue mass. These should act in six or eight hours after they have been taken. If they do not act at this time some vigorous saline is given, and when they have acted thoroughly the second dose of morphin is given, which is usually about the eighteenth hour. This should be one-half the original dose; i. e., one-third of the original twenty-four-hour daily dose. The belladonna mixture is still continued, and ten hours after the second dose of morphin has been given, that is about the twenty-eighth hour, five compound cathartic pills are again given and 5 grains of blue mass, these again if necessary followed by a saline seven or eight hours later. At times when the C. C. pills are not acting well, or too slowly, five or six "B. B." pills are given from two to three hours after the C. C. pills. These "B.B." pills are the pilulæ catharticæ vegetabiles of the Pharmacopeia with 1/10 gr. oleoresin of capsicum, ½ gr. ginger, and 1/25 m. of croton oil added to each pill. After these have thoroughly acted at about the thirty-sixth hour, the third dose of morphin is given, which is one-sixth of the original dose. This is usually the last dose of morphin that is necessary. Again, ten hours after this third dose of morphin, i. e., the forty-sixth hour, the five C. C. pills and 5 grains of blue mass are again given, followed seven or eight hours afterward by a saline, and one expects at this time to see the bilious green stool appear. When this appears, after the bowels have moved thoroughly, ten or twelve hours after the third dose of morphin, about the fifty-sixth hour, 2 ounces of castor oil are given to clear out thoroughly the intestinal tract. During this last period when the bowels are moving from the C. C. pills and before the oil is given, the patients have their most uncomfortable time. Their nervousness and discomfort can be controlled usually by codein, which can be given hypodermically in 5 grain doses and repeated if necessary, or some form of the valerianates may help them. About the thirtieth hour these patients should be stimulated with strychnin or digitalis, or both. After they are off their drug, I have found that the tonics which do them the most good are those which contain some form of phosphorus and arsenic, and I must reiterate as before the danger of these patients overeating, and thus bringing back all their withdrawal symptoms due to the disturbance of digestion. They have been in the habit of referring all uncomfortable feelings to those of the withdrawal symptoms of morphin, and digestive disturbances feign these withdrawal symptoms. Sometimes about the thirty-sixth hour the stools became clay-colored. Some form of prepared ox-gall is most effective to stimulate further biliary secretion given in small doses every hour for five or six doses.

In treating an alcoholic, the belladonna mixture and the five C. C. pills and 5 grains of blue mass are given simultaneously at the first dose. The belladonna mixture is continued every hour of the day and every hour of the night the same as with the morphin patients, and twelve hours after the initial dose patients are again

1. The Obliteration of the Craving for Narcotics, THE JOURNAL A. M. A., Sept. 25, 1909.

given from three to five C. C. pills, and at the twenty-fourth hour after the initial dose, they are again given the cathartics followed by salines if necessary, and again at the thirty-sixth hour. After these last cathartics, the bilious stools will appear, and by the forty-fourth or forty-fifth hour the castor oil is given. Sometimes it is necessary to carry on the treatment over another period, and the C. C. pills and blue mass are again given at the forty-eighth hour, which would bring the end of the treatment about the sixtieth hour.

Elderly or very nervous patients who have been on a prolonged debauch are tapered off with 2 ounces of whiskey for four or five doses through the first twenty-four hours. If these patients are excessively nervous it is necessary also to see that they sleep, and the mixture of chloral hydrate, gr. xx, morphin, gr. ⅛ tincture of hyoscyamus dram ½, ginger m. x and capsicum m. v, water ½ ounce, which was recommended before is the best hypnotic for them. These patients should also have cardiac stimulants such as strychnin and digitalis after the first twenty-four hours, sooner if they are weak. If the patient has an alcoholic gastritis and cannot retain medicine, it is wise to give him 5 grains of Tully's powder (pulvis morphinæ compositus) with 5 grains of sodium bicarbonate about every two hours for two or three doses, as this seems to be the most effective method of allaying the vomiting of an alcoholic gastritis.

The cocainist can be treated like the alcoholic, except that no cocain is given at any time, and strychnin or some such stimulant must be given from the beginning of the treatment.

I have often been asked as to the permanency of this treatment, and I can but repeat that most morphinists desire to be rid of their addiction and that when once the withdrawal symptoms are passed and the craving for the drug has ceased, they are only too glad to be free from their slavery. If the cause for which they originally took the opiate is removed, in the majority of cases they will not return to their drug. With the alcoholic it is different, although this treatment is the best one I have yet found to eradicate thoroughly and in a short time all desire for alcohol and to stimulate him mentally and leave him in a condition in which he can exist without his customary stimulant. Alcoholism is a social vice and not a secret one, as is morphinism. Most men cannot bring themselves to realize that they cannot take a single drink and cannot drink in moderation as they see other men do, and it sometimes takes two or three bitter lessons before they are willing to acknowledge this to themselves. When once they realize it and acknowledge it to themselves as well as to others, they will not take alcohol, but there is no compromise with them. They cannot take a single drink of any form of alcohol without the danger of going back to alcoholic excess.

Since publishing my first article I have treated many patients addicted to morphin, cocain and alcohol, and the results obtained with these patients, as well as the reports from many sources obtained through an enormous correspondence, have confirmed me in my conviction that this treatment will more effectually obliterate the craving for narcotics, in the shortest time and leave the patient in better condition to recuperate to vigorous health, than any other treatment that has yet come to my knowledge. It is a treatment of many details which must be adhered to if success is to follow. But my experience justifies me in saying that if these details are adhered to, success will follow.

36 East Thirty-First Street.

A GROUP OF SYPHILITIC PATIENTS TREATED WITH SALVARSAN (EHRLICH-HATA 606)

OLIVER S. ORMSBY, M.D.
CHICAGO

This group of cases includes chiefly those of dermatologic interest. At the time the work was done, the method of administration as recommended by most experimenters was by subcutaneous injection of an emulsion of the drug according to the Wechselmann method. After the first group of injections had been made subcutaneously in emulsion by this method, Dr. Flexner requested that the intramuscular method be employed, using a solution according to the method of Lesser. The second injection given in Case 7 and the one given in Case 8 were therefore made in this manner.

The cases included a well-defined macular, a papulopustular, a corymbose, a large flat papular, a deep gummatous (bones and deeper tissues) and an ordinary gummatous syphiloderm, and two in which early nervous lesions were exhibited. The patients were all examined for any contra-indications relative to heart, lungs, kidneys, etc., by Dr. Joseph L. Miller, and as to eye complications by Dr. E. V. L. Brown. This work was controlled by the Wassermann reaction repeatedly made, and by blood-counts; and finally was undertaken with the view of ascertaining the result obtainable with a single injection of a comparatively large dose of the drug. They have been under observation for more than three months, so we can now determine what the result is with a single dose in these cases. I am indebted to Dr. H. J. Nichols and Dr. Simon Flexner for the material (drug) used, and to Dr. J. Frank Waugh for valuable assistance in the preparation of the remedy and making the Wassermann reactions, and Dr. Nilsson, House Surgeon at the County Hospital, for assistance in many ways.

In view of the enormous literature already at hand, it is my purpose only to record results, as it is by the accumulated results in patients actually treated in many parts of the world, that deductions will finally be drawn both as respects the drug itself and its method of administration.

Most of these patients were treated at the County Hospital, where they were entered in my service, and most of them remained two months or more to complete the preliminary observations.

REPORTS OF CASES

CASE 1.—Gummatous and ulcerative syphilis (hereditary). M. W., a woman aged 23, entered the Cook County Hospital Oct. 18, 1910; duration of the disease in its present form, twelve years.

History.—The patient was apparently healthy until twelve years previously, when (as stated by the patient) following vaccination the lesions to be described began to appear. During the twelve years the lesions had periods of activity and retrogression. Ulcers appeared and healed, with new ones occurring. The distribution was fairly general. Head, face, arms and limbs had all been attacked and the deformity was marked and characteristic. The bones in all of these regions showed deformity.

Examination.—At the time of administration of salvarsan the patient presented the following appearance: Small, elderly-appearing, with scars, ulcers, deep nodules and discharging sinuses over most of the body; mentality below par.

Regional:

Head: The entire scalp presented a mass of deep ulcers, pus-discharging sinuses and heavy crusts. In many places bone involvement was evident. The face presented deep fun-

nel-shaped openings, extending on the right side into the malar bone; a similar lesion present on the left side; marked ectropion of right lower eyelid due to contracture from a scar below. Eyes: Pupils small, but reacted normal; negative otherwise. Mouth: Palatal arch high and narrow. Teeth: Several missing, remainder more or less loose and carious. Nose flat and depressed; nasal septum eroded. Neck: Enlarged glands on either side.

Trunk and Genitals: No cutaneous or deeper lesions.

Upper Limbs: Bones of both forearms deformed; irregular deep depressions present, many scars and ulcerated areas, and some deep sinuses; joints enlarged, deformed and limited in motion; small joints of hands also involved; glands of axillæ enlarged.

Lower Limbs: Tibiæ deformed. Typical deformity of bones (enlarged and bowed); large ulcers and deep sinuses on both sides; a typical luetic ulcer present in right ankle the size of one's palm.

Urine: Cloudy, straw-colored, specific gravity 1.021, acid in reaction; albumin present abundantly; no sugar; microscopic examination revealed granular casts, a few epithelial cells and a few leukocytes; no erythrocytes; mucus moderately present. Wassermann, October 19, +++.

October 20, 0.45 gm. salvarsan was injected beneath scapulæ, dividing the dose into two parts, one-half given on either side.

General examination revealed no particular contra-indications. The patient had been habitually restless and sleepless at night.

Progress and Comments.—The urinary findings under some conditions would have been a contra-indication for the treatment, but in view of the probable luetic kidney involvement, it was not so considered in this case. The progress toward recovery following this injection was remarkable. No local reaction of moment occurred. There was a very moderate systemic reaction. After the first night the patient slept well and rapidly gained in weight. Her mental condition changed from that of a dull, morose individual to a happy, smiling and much younger-appearing woman. Pain entirely ceased; ulcers and sinuses healed and clinically the patient recovered rapidly. The Wassermann reaction remained strongly positive throughout the entire period of observation. Three months after the injection the patient had not entirely recovered, for a few small lesions remained. At this time more treatment was indicated. The Wassermann record is as follows:

October 19, just previous to the administration of the drug, it was strongly positive, +++. October 24, strongly positive, +++; November 12, strongly positive, +++; December 6, strongly positive, +++; December 20, strongly positive, +++; Jan. 20, 1911, strongly positive, +++.

CASE 2.—*History.*—Varioliform, papulo-pustular syphiloderm. The patient, L. S., a man aged 28, entered the Cook County Hospital, Aug. 23, 1910. The eruption was generalized and typical. The remains of the initial lesion were prescut. There was general adenopathy. From the date of admission until the administration of the special treatment, hygienic care was exercised. During this time, about two months, the lesions changed their type, becoming entirely papular, but fully as abundant in number as originally. The urinary examination revealed no abnormalities.

Treatment.—October 20, ophthalmologic and general examinations revealed no contra-indications for the treatment. The Wassermann reaction was strongly positive, +++. A dose of 0.5 gm. salvarsan was injected, using the technic as outlined above. This patient suffered sufficient pain to warrant an injection of morphin, gr. ¼, at 9 p. m., five hours after the administration of the salvarsan. Subsequent to this nothing unusual occurred. No indurations remained at the seat of the injection.

Progress and Comments.—After forty-eight hours the lesions were clearing more rapidly than before. Resolution continued for about two weeks, when a recrudescence occurred and during the following three months new lesions kept constantly appearing. The entire number naturally decreased, but the disease was still clinically active. The Wassermann record is as follows: October 24, positive,, ++; November 12, positive, ++; December 20, strongly positive, +++. It is needless to state that more treatment is necessary.

CASE 3.—*History.*—Papular syphiloderm. The patient, H. S., man aged 42, entered the County Hospital Sept. 24, 1910. The patient had a fairly generalized, ordinary flat papular syphiloderm, accompanied by general adenopathy.

Examination and Treatment.—October 24, the day of injection with salvarsan, the general examination revealed pulmonary emphysema, but no other complications. The eye-findings were negative. The urinary-findings were negative. The blood-findings showed moderate leukocytosis, 14,050 W. B. C. The Wassermann reaction was positive, +++. Salvarsan, 0.5 gm., was administered. The immediate and later results were not striking. The cutaneous lesions cleared for about two weeks, but recrudescence kept up for the following two months. The Wassermann record is as follows: October 24, strongly positive, +++; November 12, strongly positive, +++.

November 22, the date of departure from the hospital, the disease was still active, though much less so than at the beginning, and more treatment was strongly indicated.

CASE 4.—*History.*—Corymbose syphiloderm. The patient, a man aged 35, was admitted to the County Hospital, Sept. 21, 1910. The duration of the eruption at that time was two months; there was a clear history of an initial lesion, and general adenopathy was present. The lesions were generally distributed and typical.

Examination and Treatment.—October 21 a general examination revealed an enlarged liver, but no other findings. The eye-findings were negative; urinary analysis, negative; Wassermann, +++. October 29, 0.5 gm. of salvarsan was administered.

Progress and Comments.—The lesions began to disappear fairly rapidly, but within two weeks new ones occurred, so that the new ones about kept pace with the clearing lesions. New lesions were still appearing, three months after treatment. The Wassermann record is as follows: October 29, strongly positive, +++; November 12, strongly positive, +++; December 6, mildly positive, +; December 20, positive, ++; Jan. 20, 1911, mildly positive, +.

That more treatment must be given is evident.

CASE 5.—*History.*—Macular syphilid, ordinary type. The patient, a man aged 23, entered the County Hospital, Sept. 29, 1910. The initial lesion occurred seven weeks previously. A fairly general exanthem, macular type, was present, chiefly on the trunk. General adenopathy was present. This was a typical and ordinary case.

Examination and Treatment.—Just before the administration of the special treatment the urine was found to be normal. The general examination and ophthalmologic examination were both negative as to pathologic findings. October 22, 0.5 gm. salvarsan was administered at 4:30 p. m. At 10 p. m. morphin, ¼ gr., was administered. No local or systemic reaction of moment occurred.

Progress and Comments.—This patient remained in the hospital for three weeks after the treatment. During this period no perceptible change occurred. The exanthem was gradually fading. The Wassermann reaction just previous to the injection was strongly positive, +++. After three weeks, before leaving, it was strongly positive, +++. This patient agreed to return, but failed to do so.

CASE 6.—*History.*—Gummatous and ulcerative syphilis. The patient, M. H., a married woman aged 32, entered the County Hospital, Oct. 16, 1910. Three days previously 0.5 gm. of salvarsan had been administered at the clinic in Rush Medical College. The general examination and special examinations had been made there, including a Wassermann reaction, which was positive. This patient was generally weak, had lost weight, was anemic and had two typical deep areas of gummato-ulcerative lesions, one on the forehead involving the frontal bone, and one over the left shoulder.

Progress and Comments.—The nutrition immediately improved. The lesions healed rapidly until the forehead lesion cleared up. The one over the shoulder healed more slowly. The Wassermann reaction remained positive until her departure, five weeks after admittance. In this patient the cutane-

ous and subcutaneous lesions yielded, but not any more rapidly than they do under ordinary treatment. The nutritive effect was perhaps more marked, but even that is open to question.

CASE 7.—*History.*—Cerebral syphilis and incipient tabes. The patient, a man aged 37 (private patient), was first seen Jan. 12, 1910. The initial lesion occurred in March, 1901, followed by a macular eruption of short duration. During the first year the treatment consisted in the protoiodid of mercury eight weeks at a time, followed by eight weeks of rest during the entire year. In the second year three courses, of four or five weeks' duration each, of the succinimid of mercury, were employed by intramuscular injection. In the third year mixed treatment, including some injections, some potassium iodid, and Bernheim pills, was employed. From then until 1909 a moderate amount of mixed treatment was employed each year. During the second year after infection an incomplete attack of hemiplegia occurred. This involved the left side of the body, but rapidly cleared up. In 1905 a deep ulcer occurred in the tonsillar region, following the removal of this organ for a cervical adenitis. This ulcer healed under mixed treatment. Then for four years no symptoms occurred. In October, 1909, paresis of the external rectus muscle occurred. Energetic treatment with inunctions and potassium iodid made no change in this condition for some time. January 12, when I saw the patient, the above paresis was still present and there were some scorching, intermittent pains in the skin over the left breast. On this date, the findings led to the conclusion that the patient was suffering with cerebral lues, with probably incipient tabes. A Wassermann test at this date was negative (probably influenced by treatment). February 24, pains were noted in both sciatic nerves, also aching pains in both calves; slight unsteadiness in gait, numbness of left ring and little fingers, left cheek and left side of the roof of the mouth; patellar reflexes abolished.

April 24, treatment was suspended on account of saturation. May 9, oculo-motor paresis of the right eye shown by ptosis, dilated pupil and paresis of accommodation of 1 diopter. By May 31 this condition had largely cleared up. June 11 a similar condition arose in the left eye. Treatment during 1910 up to October consisted in injections of salicylate of mercury, potassium iodid and ferruginous tonics. October 28, 0.5 gm. of salvarsan was injected subcutaneously in emulsion.

Examination.—The condition on this date was as follows: Slight Romberg, unsteady gait, patellar reflexes abolished, bladder weak, obstinate constipation, girdle sensation, numbness of soles of feet, left side of face and left hand, intermittent scorching pains in the back; single vision looking straight ahead, but paresis shown by looking to either side, up or down; paresis of both eyes, 1 diopter. Wassermann, positive, +++. Urine, negative.

Progress and Comments.—Following the first injection of salvarsan, great improvement in the general health occurred. The patient gained several pounds in weight in a few weeks; pains all cleared up, gait became steadier, Romberg less marked and bladder stronger; focal symptoms, however, were unchanged. December 15, eye symptoms became exaggerated, and on December 21 a second injection of 0.6 gm. of salvarsan was given in solution into the gluteal muscles, according to the method of Lesser. The Wassermann reaction was still positive. January 27 all symptoms were improving slowly; the Wassermann reaction slightly positive, +.

That the treatment did much for this patient there is no doubt. Much longer observation is necessary to determine the necessary procedure.

CASE 8.—Spinal meningitis (luetic) and tabes. The record of this case is incomplete, but it is included here on account of the fact that of the group this was the only patient who had a systemic reaction.

A general examination of the patient was made before the treatment, and the eyes were examined at the Presbyterian Hospital. December 28 0.5 gm. of salvarsan was injected intramuscularly according to the method of Lesser. On the second day the temperature rose to 103 F., and on the third day to 103.5, and after the fourth day rapidly subsided and the patient left the hospital.

Progress and Comments.—This case is interesting owing to the systemic reaction indicated by the marked elevation of the temperature. There was no nausea; the patient was not particularly ill and apparently recovered rapidly from the attack. His physician reported thirty days after the treatment that the patient was much improved. It was impossible to get another specimen for a Wassermann reaction. This reaction was moderately positive before the original injection.

As will be seen by a study of the above case-reports, marked effect is produced on the disease by this remedy, the most striking in this series being in the case with deep gummatous and ulcerative lesions involving bones and deep structures. The relief of pain, the great increase in the general nutrition of the patient, and the rapid healing of the lesions were striking.

In none of the cases did any untoward results occur. In one only was there any local reaction of any moment and that consisted in an induration which still remains. In three cases an injection of morphin for pain was administered the first night. In none of the others was the pain sufficient to require any sedative. In one case marked elevation of temperature occurred on the second and third days (Case 8). In all of the cases of early syphilis the disease was well advanced and well marked, showing a complete saturation of the patient with the infection. In judging the value of the treatment this fact must be borne in mind.

METHOD OF ADMINISTRATION

The major portion of these patients were injected with the emulsion according to the Wechselmann method. In the last two the solution was injected intramuscularly, according to the method of Lesser. Still later, the instructions were to use the intravenous method. This method does not figure in this experimental report. The latter method is proving more rapidly efficient, but necessarily is attended with more danger, especially as regards general use.

The treatment in the early cases of this group was controlled in a way by other similar cases treated with injections of mercury, and the latter cases apparently made as good progress as those treated with salvarsan and finally better. This, however, does not demonstrate anything essential, except the fact that one injection by emulsion is not sufficient. Had the injections been repeated at intervals of a few days or weeks, as indications demanded, a much different result may have been obtained; and again, the manner of administration may have been less efficient than those now being employed. This group, therefore, seems to demonstrate the inability of a single injection, as here administered, to eradicate the disease.

CONCLUSIONS

This group of cases emphasizes facts demonstrated in the work of a large number of others on record which, summarized, are as follows:

1. Recurrences and recrudescences commonly happen after a single injection, which indicates repeated injections or resort to older methods to complete the eradication of the disease.

2. A marked and profound effect is immediately produced, which makes one indication clear for its use, viz., a rapidly spreading or malignant case in which ulceration threatens vital or useful structures, and an immediate result is imperative.

3. The effect in promoting increased nutrition is marked, especially in cachectic patients, thus placing the patient in a better physical condition normally to combat the invading organisms.

A study of these with other cases demonstrates the facts that salvarsan is a therapeutic agent of great potency; and that it is a valuable addition to our weapons of defense against certain forms of syphilis. The range of these is as yet undetermined. No one can admit that it can, in the present state of our knowledge, replace to any large degree our other well-known and very efficient agents in the treatment of syphilis.

The consensus of opinion now seems to be that it has its greatest usefulness in malignant cases, viz., those in which rapid destruction of tissue is in progress; in mucous membrane lesions about the mouth, tongue, throat, etc.; in the deeper lesions affecting subcutaneous and bony structures, in these the healing of the lesions, the relief of pain, and the promotion of nutrition being remarkable; and finally, in cases (which are fortunately few) which have resisted other well-known measures. Cases in which opinions differ and in which only time will demonstrate the value of salvarsan are the very early cases in which a profound effect on the spirochetes may entirely destroy them before the human organism has become thoroughly saturated, and also the ordinary cases which have in the past been well managed to a successful termination by the usual treatment.

Finally, the greatest credit is due Professor Ehrlich for the production of a chemical remedial agent worked out on scientific principles, and even though it may not ultimately fulfil the unparalleled expectations, it opens a field for research in treatment of parasitic affections that should be of great importance to humanity.

100 State Street.

A SIMPLE SUPPORT FOR THIGH ELASTIC STOCKINGS

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CREIGHTON, NEB.

We are sometimes compelled to fit patients with thigh elastic stockings. Several of my patients have complained that they rolled down at the top and became unbearable. The tension produced by fastening the garters to the stockings is so great as to preclude that method of support. I devised this simple method of obviating their trouble. Four or five ordinary dress stays are sewed at varying intervals around the top of the stocking in the longitudinal diameter. It will be found that this ends the trouble. I would, however, suggest that the manufacturers weave small whalebone stays in the stocking in the same manner; this would make a more durable and attractive article.

A CASE OF NEPHROLITHIASIS

WITH REPEATED TEMPORARY RELIEF BY URETERAL CATHETERIZATION

W. P. WILLARD, M.D.
SAN FRANCISCO

The history of this case of nephrolithiasis is, I think, of sufficient interest to be reported.

History.—Mrs. R., aged 41, had been in good health until the birth of her child eighteen years before she came under my observation. At that time she had pneumonia from which she recovered after an illness of two months. Six years later she had ovarian and tubal trouble that necessitated the removal of both tubes and ovaries. Since this operation the patient had never been in very good health. Five years prior to being seen by me the first urinary symptoms appeared, which consisted of painful and frequent urination, and the passage at times of gravel. These symptoms persisted for several weeks and then abated, although the urine continued to be cloudy. Three years later the patient noticed a large, painful swelling in the left side of the abdomen which suddenly disappeared after being present two weeks. At this time a dull pain in the back appeared, and has continued. In January, 1909, she had a severe pain in the right side of the abdomen and back accompanied by a large swelling which disappeared in about ten days.

Examination.—I saw the patient for the first time seven months later and found her suffering greatly with a large, boggy mass extending from the costal border to the brim of the pelvis on the left side. She had a rapid pulse, of high tension, was vomiting and very much prostrated. She had passed no urine for two days and a half, and on introducing a catheter I found the bladder empty. As she was in a very bad condition I advised trying to relieve the condition temporarily by introducing a ureteral catheter.

Treatment.—Some difficulty was experienced in finding the ureteral orifices on account of a chronic cystitis and lack of motion of the openings. On passing a catheter 8 inches into the left ureter an obstruction was encountered. After injecting oil and glycerin with no result, I injected boracic acid solution through a large ureteral catheter, under considerable pressure, and was able to push the catheter to the renal pelvis. The urine spurted from the catheter and within a minute urine could be seen coming from the right ureter. In the first ten hours 1,200 c.c. of urine were passed. The catheter was allowed to remain in the ureter forty-eight hours, and on its removal a mass of mucus and phosphatic sand was passed. After this the patient felt well for six months; then she had a similar attack, which I relieved in the same way. On withdrawing the catheter a calculus 0.5 cm. in diameter was passed. The *x*-ray plates which were made at this time show several calculi in both renal pelves. Operation was positively refused.

Subsequent History.—In March, 1910, the patient again had anuria for thirty-six hours, severe pain on the left side, nausea and vomiting. The obstruction at this time seemed to be at the pelvis; probably one of the stones had engaged in the ureter, blocking the opening. The passage of the catheter had pushed it out of the way and allowed the pelvis to empty. Nothing passed after the removal of the catheter. June 1 the patient again had the same symptoms but was relieved by hot baths and applications. June 29 I was called, after she had tried for twenty-four hours to get relief. Her condition was about the same as described in the first attack, and was relieved in the same way. The obstruction was 10 inches from the bladder. After the catheter had been removed, at the end of twenty-four hours, a calculus 8 by 5 mm. was passed. Between the attacks the urine was full of pus, but the patient was not troubled in any way, except for a dull backache and at times a light night-sweat.

Although this procedure can hardly be recommended for the treatment of nephrolithiasis, still, as a palliative measure in cases in which the condition of the patient makes immediate operation hazardous, and also when small calculi are lodged in the ureter, it is worth trying.

177 Post Street.

Fatigue as a Symptom.—Chronic fatigue is the most obvious symptom in neurasthenia minor. It is true fatigue rather than simple weakness, as is shown by the facts that action is readily excited, but takes an abnormally long time to reach its maximum; that effort cannot be sustained evenly, but shows marked oscillations, and that there is slight incoordination. It is presumably due to the continual production of fatigue toxins. It affects both the mental powers and the physical, probably including the functioning of the viscera.—P. C. C. Smith in the *Practitioner*.

Therapeutics

DRUGS ACTING ON THE CIRCULATION

DIGITALIS

(*Continued from page 423*)

Therapy.—The conditions improved by this drug are:

1. Poor heart action from any cause except when there is advanced myocarditis, or fatty degeneration.
2. Lack of compensation in valvular disease.
3. Simple dilatation.
4. The irritable or weak heart of nicotin poisoning.
5. The strained heart from over-work or over-athletic exercise, severe marching, mountain climbing, etc.
6. Poor vasomotor tone.
7. Edema or exudations with no serious kidney lesions.

Before discussing the use of digitalis in lack of compensation in valvular disease, it will be well to consider just what is meant by lack of compensation, as this drug should not be used in valvular disease when there is full and complete compensation. Broken or failing compensation means a rapid heart, dyspnea, edema, and passive congestions of the various organs and glands of the body causing disturbed digestion, diminished nutrition, and the retention in the blood of various toxins, the results of mal-metabolism.

This drug does good in *mitral regurgitation* with broken compensation by making the ventricular contraction more complete by directly stimulating the cardiac muscle and increasing its thickness and tone as would result from systematic exercise of any voluntary muscle.

The blood-pressure in the aorta will be increased by the better action of the left ventricle and more blood is thus forced through the coronary arteries, and the nutrition of the heart is improved. Also, the greater contraction of the papillary muscles and the muscle-tissue around the mitral valve makes the opening, due to its incomplete closure, smaller, and less regurgitation takes place.

In *mitral stenosis* with failing compensation digitalis does good not only by strengthening the auricles and the right ventricle which is weakened, but by slowing the heart allows the left auricle to empty itself more completely through the narrowed mitral opening into the left ventricle. In this lesion, with the patient in bed, the heart can be slowed down to about sixty beats a minute with marked advantage. We would here caution that with profound action of digitalis the patient should never rise suddenly from the bed or from a chair, or suddenly rise from bed and evacuate the bladder, as during profound action of digitalis with the heart very slow, such sudden rising and diminution of the abdominal pressure has produced such anemia of the base of the brain as to cause sudden death.

In aortic insufficiency with broken compensation digitalis relieves the symptoms by strengthening the left ventricle, narrowing the aortic orifice, and increasing the lost tone in the aorta and peripheral vessels. Digitalis should not be pushed in this lesion as a prolonged diastole from much slowing of the heart would be of great disadvantage, and a pulse above eighty in this lesion is better than a slower pulse.

Some clinicians believe that digitalis should never be used in aortic insufficiency. However, if not used to profound effect it will often do a great deal of good when compensation has been broken in this condition. The main strain on the heart in this lesion is in the left ventricle, and the left ventricle is the part of the heart most helped by digitalis. Increased blood-pressure is not desirable in aortic insufficiency, and but slight increase in blood-pressure will occur if the digitalis is administered in small doses, though the heart muscle will be stimulated to better contraction. It is dangerous to slow a heart with aortic insufficiency below seventy, and it certainly is dangerous to slow it to sixty, as the prolonged diastole not only prevents more blood being sent upward through the carotids and cerebral arteries, but also, during diastole blood is flowing backward from the aorta into the left ventricle. At the same time, the blood is flowing toward the right auricle through the superior vena cava and therefore also from the jugular veins. The result of a prolonged diastole is anemia of the base of the brain, and this is one of the causes of sudden death in aortic regurgitation. Another danger of prolonged diastole in this lesion is of an over-filling of the left ventricle with regurgitated blood and a consequent paralysis. If serious dropsy occurs from aortic insufficiency the condition is much more serious than in mitral disease, and the prognosis is bad.

When there is lack of compensation in *aortic stenosis* digitalis will improve the condition by strengthening the left ventricle, thus overcoming the resistance at the aortic orifice. However, this drug should not be pushed in this condition, as a too sturdy action of the left ventricle against the resistance will weaken the muscle wall. In this lesion this drug often acts best when administered conjointly with nitroglycerin to keep down the peripheral resistance.

It is understood, of course, that nitroglycerin administered at the time the digitalis is administered is of no avail in counteracting any action on the blood-vessels of that particular dose of digitalis, but if digitalis is administered twice in twenty-four hours and nitroglycerin four times or more in twenty-four hours, more or less continuance of lowered blood-pressure will occur. It may be stated here that although in the laboratory the effect of lowering of the blood-pressure of a single dose of nitroglycerin lasts but a short time, clinically it is a positive fact repeatedly noted that in conditions of high blood-pressure when nitroglycerin in proper dose is administered, even not more than four times in twenty-four hours, the average blood-pressure is continually lower than without this drug.

The satisfactory action of digitalis when compensation is weakened in valvular disease may be many times repeated, but sooner or later in valvular lesions with recurring incompetency the cardiac muscle becomes so deteriorated that digitalis no longer is able to restore the hypertrophy. Some patients do well with small doses of digitalis long continued, for months and even years. Other patients with valvular disease and incompetency, after the hypertrophy has been restored by digitalis, may not again need a cardiac drug for months until some unusual exercise, or mental anxiety, or severe sickness has again broken the compensation, and again digitalis will improve the condition. Rarely, however, in patients who have repeatedly taken digitalis, or in some few patients always, some other cardiac medication will act better than does digitalis.

In any condition in which the *right side of the heart* alone is dilated and incompetent without valvular lesions, as occurs in pulmonary disturbances such as pleurisy, empyema, advanced tuberculosis, and especially emphysema, digitalis is of benefit. This is true in spite

of the denial by some experimenters that digitalis acts at all on the right ventricle.

In conditions of sudden *cardiac failure or shock* from any cause the action of digitalis is so slow, even if given hypodermatically, that it should not be relied on to meet the emergency. If the shock or cardiac distress can be overcome for the time being by other drugs, digitalis given at the time will in some hours begin to add its powerful stimulation to the heart and blood-vessels.

In *simple hypertrophy* of the heart, or when the compensation is complete in valvular lesion, digitalis should *not* be used.

In the various stages of *acute endocarditis* occurring as a complication in acute rheumatism it is hard to decide whether digitalis should, or should not, be used. On the one hand the heart at this time should not be stimulated to more sturdy contraction. On the other hand, the slowing of the heart can but do good by modifying the movements of an inflamed organ. If the heart with endocarditis is beating at the rate of 110 beats a minute, it would seem good treatment to cause such physiologic rest as would be produced by reducing the pulse-rate to eighty or ninety beats a minute.

Probably early in endocardial inflammation local application of ice is the best method of slowing the heart. Next, if the conditions allow it, perhaps small doses of aconite may be administered for a day or two; later, nitroglycerin may act well to slow and quiet the heart. After the acute symptoms are over it cannot be decided offhand that small doses of digitalis will not aid a heart in its repair. Most clinicians believe digitalis should never be used in this condition. Some experimental proof has seemed to show that small doses may tend to produce a more complete recovery of the heart. If a second attack of endocarditis is superimposed on a previously damaged heart and both together cause broken compensation sufficient to produce edemas, the problem whether or not digitalis should be given is still more difficult to solve.

In *pericarditis* this drug will help the laboring heart.

In the feeble heart of chronic *myocarditis* and of *fatty degeneration* the utility of digitalis is much less pronounced, and the advisability of using the drug at all has been much questioned. However, in many of these cases if the drug is given cautiously and in small doses it will prove of considerable benefit, as in many cases we are not certain that there is actual degeneration of the cardiac muscle; and also it is impossible to decide how extensive the degeneration is even if we assume that it actually exists. It is plain that we should not deny the patient the possible benefit from digitalis though at the same time the action of the drug should be carefully watched. Degeneration of the cardiac muscle is frequently due to inadequate nutrition caused by impaired circulation through the coronary arteries. The orifices of these arteries are covered by the semilunar valves during the systole of the heart; consequently, these arteries are not supplied with blood during its active propulsion through the aorta. But during the diastole when the aortic valve is closed the elastic rebound of the blood in the aorta fills these arteries and gives to the heart its nutrition. If the aorta is imperfectly filled, or if the blood is allowed to flow back into the left ventricle on account of the imperfect closure of the semilunar valves, or if the blood-pressure is abnormally low, the coronary arteries will not receive an adequate amount of blood and the nutrition of the heart will be impaired, and degeneration of the cardiac muscle will take place. When any of these conditions exist, digitalis, by throwing a large amount of blood into the aorta, by causing more complete closure of the semilunar valves, and by increasing the blood-tension in the arteries, will cause an increased amount of blood to enter the coronary circulation, and the nutrition of the heart improves. Hence, digitalis will delay the progress of the degenerative process unless there is serious atheroma of the coronary arteries, but it cannot, of course, restore structures already degenerated. This latter fact makes the use of digitalis so often disappointing in the condition of chronic myocarditis. If acute myocarditis is diagnosed or surmised, digitalis should not be used.

When there is *irregularity* of the heart without any valvular lesions or signs of cardiac insufficiency, occasionally digitalis will improve the rhythm. This is especially true when the heart misses an occasional beat from previous over-exertion or cardiac strain. Under these conditions digitalis often relieves the cardiac discomfort and renders the pulse regular. If there is cardiac pain at the same time there is irregularity, digitalis will often increase that pain and do harm. In most instances of this malfunction strophanthus acts better than digitalis. If there is arteriosclerosis, nitroglycerin will improve the condition.

Not infrequently when there is complete *heart block*, digitalis should be used with caution, although of course it is possible that a better ventricular contraction and an improved aortic blood-pressure may cause more perfect circulation and therefore better nutrition to the part of the heart that is in trouble in this condition.

Digitalis should not be used in *endarteritis* or in atheroma, and hence, ordinarily, not in *aneurysm*. If aneurysm occurs early in life when the arteries are not, diseased, in certain selected cases it might be used with care if it were otherwise indicated.

In *cerebral inflammations*, or in any acute cerebral condition, digitalis is contra-indicated, but in the insomnia of *neurasthenics* or when there is general *vasomotor debility*, when the patient is drowsy when up and awake, and wakeful when he lies down, the tone of the blood-vessels being so poor that they dilate in the lower part of the body when the patient is up and in the head when he lies down, digitalis oftentimes acts as a good soporific. Digitalis may be used for this purpose alone, or if given conjointly with more active hypnotics will make a much smaller dose of the hypnotic successful than when it is used without the digitalis. In fact, in neurasthenic conditions or in conditions of vasomotor debility digitalis is a general tonic for the whole system, improving the general circulation and increasing the general nutrition. Profuse sweating, especially in the axillæ, in neurasthenic patients is improved by digitalis.

In *delirium tremens*, whatever cardiac treatment is given should be given hypodermatically, as drugs given by the stomach are either not absorbed at all, or are absorbed very slowly, which accounts for the harmlessness of the enormous doses of digitalis given by the mouth in this condition.

In *chronic alcoholism* before hardening of the arteries has occurred this drug is undoubtedly of advantage.

Digitalis has been recommended and used for various *internal hemorrhages*, especially for hemoptysis, but it is a question of doubt whether a drug which raises the blood-pressure as does digitalis is rational treatment. The success which has attended its use in this condition is probably really the coincidence of the natural cessation of the hemorrhage. Venous hemorrhages, either

from the nostrils or from the lungs, are often stopped by the administration of digitalis. This is especially true if there are valvular lesions. Ordinarily, however, it must be remembered that drugs that raise the blood-pressure are not indicated in internal hemorrhage. In other words, such drugs as digitalis, ergot, strychnin, and atropin are generally contra-indicated. Those that lower the blood-pressure, as the nitrites, are the drugs that should be used.

On account of the slowness of its action, digitalis is not indicated in *shock* and *collapse*. Also, it has been shown by experimental evidence that animals in condition of shock do not live as long when treated with digitalis as those who are not so treated. Therefore, it is inadvisable to use digitalis in this condition.

In *purpura* and in hemorrhagic diathesis, digitalis, by contracting the blood-vessels, may tend to diminish the frequency of the hemorrhages. There are other treatments, however, more useful.

This drug by contracting the blood-vessels of the genital organs has been thought to act as an *anaphrodisiac*, and it has also been used in *spermatorrhea*. In these conditions, when there are local causative irritations and inflammations, digitalis would be of no benefit. If there were a general vasomotor debility digitalis could be good treatment.

Though not a very well-established fact, it is considered by some writers that digitalis will stimulate the uterus to contract, and hence this drug has been used in menorrhagia. It could do good only as a general circulatory tonic. It has also been recommended in *post-partum hemorrhage*, but any action in this condition would come too late to be of value, and as the bleeding is from the open veins, it is difficult to understand how it could do any good except by later improving the lost tone of the systemic vessels.

In *edema* from other causes than valvular disease, as occurs in anemia, especially of the lower extremities, when combined with other proper treatment digitalis is of marked benefit. *Chronic eczema* and ulcers of the leg, with or without varicose veins, are often benefited by digitalis.

When there are *effusions* without kidney lesions, or when there is chronic liver disease digitalis is often of benefit.

In *Graves' thyroid disease* this drug given for a long time may do considerable good by overcoming the dilated condition of the blood-vessels caused by the hypersecretion of the thyroid. Its power of slowing the heart, however, in this condition is very limited, and large doses to produce that result would probably not be justified though its prolonged use might gradually aid in establishing a cure.

The use of digitalis in *renal disease* is much discussed, some clinicians advising it and others denouncing it. No fixed rule can be given. In acute congestion of the kidney, digitalis should not be used. The same is theoretically true in uremic poisoning. However, with low vasomotor tension and a weak heart digitalis should be tried in not too large doses. If it does not give good results in thirty-six or at most forty-eight hours it should be stopped. If the results are good, the size of the dose should be diminished as over-action from digitalis can certainly readily take place in kidney lesions.

In the diseases of the lungs above cited with a strained right side of the heart, this drug is of advantage. It is also useful in many cases of *chronic bronchitis*, aiding the recovery by improving the pulmonary circulation. Small doses are also often of benefit in severe *whooping-cough* in which the right side of the heart is subjected to such serious strain.

Digitalis has been used in *pneumonia*. Whether it is of advantage in this disease can be decided only by the individual case. Not every pneumonia patient should receive digitalis, but the condition of the heart may call for it. In the first stage it should not be used; in the second stage it may be used; in the third stage, especially where there is slow resolution, in combination with other appropriate treatment it may often be of marked advantage. If there is "prune juice" expectoration, showing a venous stasis, or insufficiency of the right ventricle, digitalis may be advisable at any stage of pneumonia. A few clinicians use digitalis throughout the pneumonic process, but they have not satisfactorily proved their case, and digitalis has seemed at times to increase the pulmonary congestion, increase the dyspnea, and cause dangerous symptoms.

Often during pneumonia the urine shows albumin and the kidneys secrete an insufficient amount of urine, even without any apparent cardiac failure. During pneumonia, digitalis, instead of increasing the urine output, frequently seems to decrease it, and the cumulative effect of the drug during this disease is readily caused.

Some clinicians advise the use of digitalis *as an antipyretic*. Before we can accept an antipyretic action of this drug in non-poisonous doses, we must know what other treatment was given in the cases in which the antipyretic action took place. The action of high internal temperature on the pneumogastric nerve or its center in the medulla is such that many times digitalis will not slow the heart, hence it should not be pushed in fevers, if it is given at all. Also, when there has been prolonged fever the cardiac muscle becomes weakened and perhaps slightly degenerated, and we here have another reason for giving digitalis in very small doses, as it is not justifiable to add much irritation to an injured organ.

Contra-Indications.—High tension of the arteries, atheromatous conditions, weak cardiac muscle from prolonged fevers, from fatty degeneration, or from myocarditis, and ordinarily serious kidney lesions should contra-indicate the use of digitalis. Inflammation of the stomach should cause some other cardiac drug to be substituted.

Digitalis is useless, if not harmful, in an attack of tachycardia and in a failing heart after a severe fever, and should not be used in these conditions. It cannot be relied on to do any more than aid the circulation when there are large effusions.

Official Preparations.—The following are the official preparations:

Digitalis: The dried leaves, dose 0.05 gram (about 1 grain).

Extractum Digitalis: Average dose 0.03 gram (½ grain).

Fluidextractum Digitalis: Average dose 2 drops.

Infusum Digitalis: Average dose 10 c.c. (about 2 fluidrams) or 2 teaspoonfuls.

Tinctura Digitalis: Average dose 10 drops.

Non-Official Preparations. — Various supposedly assayed watery and alcoholic extracts of digitalis are on the market, and some tinctures are prepared in such a manner as to have the fatty part of the digitalis removed. Such tinctures seem to be less likely to cause irritation of the stomach, and are therefore better tolerated. Even in these supposedly assayed preparations the strength at

times varies, and the dose of any one single preparation of digitalis is *enough* to accomplish the object desired, unless undesirable symptoms occur which prohibit further use of the drug.

Digitalinum: Digitalin is a varying product as it occurs in the shops and may or may not represent a desired activity. It is a white or yellowish white powder, odorless and bitter. Until this product is absolutely pure and always the same the beginning dose should not be more than 1/25 of a grain. However, a dose as high as ¼ of a grain may be given before the physiologic effect of the drug desired is obtained. It must be remembered, however, that even this glucosid administered hypodermatically acts very slowly.

Digitoxin: A good preparation of *digitoxin* on the market is under the name of "digalen." Investigation of this product has seemed to show that it is a digitoxin perhaps not so strong as the pure crystallin digitoxin. Digitoxin represents an active principle of digitalis, and acts a little more quickly than other principles, and is eliminated a little more quickly, but does not represent the whole value of digitalis as represented by a fresh infusion of good leaves or a properly made fluidextract or tincture. Some experimentation has seemed to show that digitoxin is more likely to raise the blood-pressure undesirably and therefore precipitate a cumulative effect by its action on the kidney vessels, while, if its action is satisfactory, it will be more rapidly eliminated than some other of the digitalis glucosids. This means that a digitoxin preparation, with the kidneys healthy, is less likely to cause a cumulative action when the drug is long continued than is the whole drug. On the other hand, with the kidneys deficient, it is perhaps more liable to cause cumulative action than is the whole drug.

Digitoxin is now used with considerable frequency in therapeutics. It is insoluble in water and is irritant, and therefore should not be used hypodermatically. It seems to decompose rather rapidly, and probably therefore loses its efficiency. While it frequently steadies an irregular heart better than the whole drug, its tendency to contract the blood-vessels more than the whole drug should preclude its use when high blood-pressure or arteriosclerosis are present.

Administration.—The best preparations for internal administration are the infusion, freshly prepared, and the tincture. These preparations would be incompatible only with such drugs as are incompatible with all infusions and tinctures of vegetable drugs. If the other official preparations are used, the digitalis leaves should be given in powder or capsule, the extract in pill or capsule, and the fluidextract alone. The drug is not expensive and perhaps not often adulterated, but if the infusion is ordered one should be sure that it is made from the fresh leaves and not from the fluidextract. The infusion is no better preparation (except possibly as representing an extract of good leaves) than is the tincture, if the tincture is a good one. The dose of the infusion is always given so much larger relatively than the dose of the tincture, that the infusion gets the credit for more efficient work. The tincture is only about six times stronger than the infusion; therefore, the equivalent dose of the infusion to 1 c.c. (15 minims) of the tincture is 6 c.c. (1½ fluidrams).

"Digipuratum" is an extract of digitalis leaves representing the active principle. It is offered in powder and in tablet form. It is insoluble in cold water and acids, but easily soluble in dilute alkaline solutions. Each tablet contains 0.1 gm., and one a day, or less, is supposed to be sufficient, if to be given for any length of time.

Digitalin is probably the preparation of digitalis most used hypodermatically, and as previously stated, it has been urged that it is used in too small doses, which is the reason so little effect has been produced. However, the French expect to get results from 0.001 gram (1/60 of a grain) of digitalin, and some French clinicians advise this dose given once, and then no more for three weeks, combined with rest in bed, purgation, and a milk diet; this for cardiac dropsy.

It is certain that the satisfactory action of digitalis is evidenced by diuresis which, however, is not in positive evidence until from thirty-six to forty-eight hours after the first dose. Some clinicians, notably the French, as just stated, seem to think that one large dose of digitalis, whatever the preparation be, is more efficient in its results, when there is cardiac insufficiency with edema, than smaller doses. Smaller doses are used when there is simple palpitation and dyspnea without edemas. Very small doses are given when it seems advisable to give the drug for a long period. In fact, the more one reads of the recommendations of various writers as to the use of digitalis, the more confused one becomes. The following seem to be valuable suggestions as to the dosage of digitalis:

1. It must be known that the preparation used is a good one.

2. No immediate symptoms of the action of digitalis must be expected. It cannot exert its physiolgic action until at least twelve hours, and not its full activity for at least from twenty-four to thirty-six hours.

3. If there are conditions present that present a doubt as to whether digitalis will do good or harm, the dose should be medium or even small and given three or four times in twenty-four hours, and if ascertained that the action is for good, the frequency of the dose may then be diminished.

4. If positive indications for the need of digitalis action are present without conditions of doubt being present, as arteriosclerosis or myocarditis or fatty heart, a large efficient dose should be given at once and then no more for from thirty-six to forty-eight hours.

5. Digitalis should not be used in shock or in cardiac failure in acute disease.

Mine Rescue Cars.—Why the deaths in American mines during the year 1909 should be about 5 out of every 1,000 employed, and in European countries only about 2 out of every 1,000, has caused inquiry. It has been found that this great difference is due largely to the fact that for some years past certain European countries have maintained efficient rescue stations. M. M. Hunting (*Scientific American*, Jan. 7, 1911) describes the six mine rescue cars equipped by the Bureau of Mines for rescue work. These cars are equipped with the latest apparatus including first-aid materials and are manned with experienced miners drawn for this work. They are stationed at the great coal mining centers, one in Wyoming, one in Montana, one at Salt Lake City, one in Illinois, one in Tennessee and one in Pittsburg, Pa. A surgeon from the American Red Cross Society and a mining engineer are members of the crew of each car. They will visit all mining towns of importance in their allotted territory and deliver lectures and give demonstrations on the use of explosives, electric apparatus, fire prevention, sanitation, etc. Rescue brigades will be formed at each place and each car will contain eight oxygen helmets and a supply of oxygen in tanks, twelve safety lamps, a field telephone and wire, outfits for resuscitating asphyxiated miners, etc. Men at each place will be trained in the use of the oxygen helmets, which permit the miner to enter the mine immediately after an explosion while it is full of poisonous gases. Such an equipment would no doubt have saved many lives in recent mine disasters.

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POSTANESTHETIC INFECTIONS

Modern surgery has rendered the occurrence of serious infections of operation wounds a rarity, but it has not succeeded so well in abolishing postoperative infection of the lungs. The development of pneumonia after an operation, even though the greatest care be taken in both anesthesia and operation, is always a dreaded possibility, and one which no amount of precaution can positively eliminate. In well-conducted surgical clinics the mortality from postoperative lung infections undoubtedly exceeds the mortality from infections arising in the operation wounds; the latter are reduced by careful technic to practically zero, while the lung complications, although much reduced by improved methods of anesthesia and better care of the patient during and after the operation, still remain a serious menace.

The reasons for these lung infections are obvious enough. Direct irritation of the respiratory passages by the anesthetic vapors, chilling of the tissues by the ether-cooled air, to say nothing of aspiration of saliva and food materials through the ineffective larynx during deep unconsciousness, are adequate to account for pneumonia. Our newly acquired knowledge of the part played by the blood in preventing and controlling infection also shows us that there is more than a local predisposition to infection, for after anesthesia the power of the blood to destroy pathogenic bacteria is markedly reduced. In fact, the members of the entire group of alcohol, ether and chloroform reduce the power of the blood to combat bacteria; the state of a man after a long anesthesia is comparable to that of an alcoholic with bronchitis who has been sleeping off an overdose of alcohol in a doorway or a freight-car.

So important a subject is this postoperative pneumonia that much interest attaches to the recent studies of Graham[1] on anesthesia and the bactericidal powers of the blood. According to these experiments, it is not the power which serum itself has of destroying bacteria through bacteriolysis which is reduced by anesthetics, but the destruction of bacteria by phagocytosis is greatly reduced. Now it so happens that the organisms which we have to fear in surgery, the pneumococcus and the pus cocci, are destroyed chiefly through phagocytosis and not by bacteriolysis, which gives added importance to this depressing effect on the bactericidal powers of the blood. Apparently ether, the anesthetic which Graham has studied, reduces both the efficiency of the opsonins and the power of the leukocytes to take up the sensitized bacteria; these effects can be seen both in the blood of patients or animals after anesthesia, and in drawn normal blood treated with ether in the test-tube. The action of the ether is not permanent, the opsonic power being restored promptly on removal of the ether.

As the distribution and action of ether in the living body is closely dependent on its great solubility in fats and lipoids, Graham sought to learn if these substances might not influence this undesirable inhibitory action of ether on the bactericidal properties of the blood, with suggestive results. Lecithin, when added to etherized serum, was found to restore the opsonic power to normal, and—what is of especial practical importance—the subcutaneous injection of lecithin into animals, immediately after anesthetizing them, was found to cause the opsonic index to rise much more rapidly than it did in control animals. This effect of lecithin apparently depending chiefly if not entirely on its ability to take up ether from aqueous solution, the action of olive oil was then tried and found to be similar. The application of this principle to clinical uses was then made by giving rectal injections of olive oil to patients immediately after anesthesia, with a strikingly rapid return to normal of the opsonic power of the patient's blood as the result. So simple and logical a procedure as this is entitled to a general and thorough trial, which it will undoubtedly receive, especially in view of its assured harmlessness. In estimating its results, however, it must be borne in mind that the lowered bactericidal power of the blood is only one of the conditions which favor the development of postoperative pneumonia; the local injury to the lungs will still exist as a source of danger, and we can scarcely expect to eliminate entirely all possibility of pneumonia, no matter how promptly we may be able to restore the phagocytic activity of the blood.

1. Graham, Evarts A.: The Influence of Ether and Ether Anesthesia on Bacteriolysis, Agglutination and Phagocytosis, Jour. Infect. Dis., 1910, viii, 147; The Effect of Ether on Certain Processes of Immunity, THE JOURNAL A. M. A., March 26, 1910, p 1043.

THE DIMINISHING BIRTH-RATE

Everywhere a cry of alarm goes up at the diminishing birth-rate. The biologist deplores the apparent decrease in the virility and fecundity of the species; the publicist shudders at the possibility of the extinction or decreased importance of the nation.

The subject of the birth-rate, increasing or diminishing, is one which always seems to arouse agitation; it is one, moreover, about which opinion has oscillated for more than a hundred years. About half a century ago, John Stuart Mill, coolest and least emotional of think-

ers, wrote apprehensively of Great Britain as "a country overpeopled or threatened with being so." In the eighteenth century, on the other hand, learned writers, with equal pessimism, maintained that the population of the known world had declined since the palmy days of the great nations of antiquity; and grave fears were entertained, even as they are to-day, lest the tendency might continue indefinitely.

It was at this juncture that Malthus came forward with his theory of the necessary limitation placed on the numbers of population by the means of subsistence. The best population, he taught, was not necessarily the largest, any more than it was the smallest; it was the population which was best nourished, most industrious and most moral. Increase in numbers was good so far, and only so far, as was consistent with maintenance of the quality of population.

It is interesting to note the swing of the pendulum once more toward the position of Malthus. For instance, two recent writers attempt to show, the one, that the cause of the diminishing birth-rate is, in the main, the prudence and not the degenerated physique of individuals; the other, that it is a necessary factor in the advance of civilization among nations.

Professor Emerick[1] concedes that the stress of modern life and the involuntary sterility induced by venereal diseases may be contributing factors in the declining birth-rate, but he insists that this does not offer a satisfactory explanation of the phenomenon. Though it may be admitted, as some authorities hold, that venereal diseases are responsible for fully 25 per cent. of inability to procreate in men and for more than 50 per cent. of enforced sterility in women, to say nothing of one-child sterility, this, Emerick thinks, leaves us quite in the dark as to the real proportion of involuntary sterility. He believes that there is little evidence that incapacity due to sexual diseases has become more common, and that it is not clear that venereal diseases are most common in that portion of the population in which the birth-rate is lowest. He also believes that the fall in the birth-rate has been too sudden and marked to be accounted for by the energy expenditure demanded by modern life. Nor do the modern sedentary occupations, the higher education of women, and the other more or less artificial conditions of life operate to reduce the birth-rate without the volition of the individual. According to Malthus, the birth-rate is less among barbarous than among civilized races, and in civilization the birth-rate has fallen among laborers and mechanics as well as among brain-workers; among the inhabitants of rural communities, as well as among those of the cities. In the evolution of the race nothing has become more firmly fixed than the power of reproduction. The persistence of the procreative power is one of its most marked characteristics. This is notorious among many kinds of degenerates.

The most potent reasons, then, in Emerick's view, for the limitation of the birth-rate are found in the personal preference of the individual, and in economic compulsion. He says that the increased expense of producing self-supporting men in this day limits their supply as truly as expense limits the production of commodities. Moreover, the economic reason that once rendered marriage compulsory for women has now lost much of its force or even acts in the opposite way. The will of the woman has consequently become more influential, not only in determining the formation of the family, but in the admission of new members to it. Of course these reasons involve many others, such as postponement of marriage, desire for ease, aims and ambitions inconsistent with marriage and offspring, etc. Emerick's conclusion is that the diminishing birth-rate is primarily volitional, and that the various factors which make for involuntary sterility are of minor importance.

Taking the larger view of the question, as applied to nations rather than to individuals, Dr. Nearing[2] undertakes to prove the converse of Emerick's proposition, namely, that the restriction of population is economically a problem of survival. In 1800 the population of the United States, for instance, was doubling itself, by natural increase, to say nothing of immigration, every twenty-five years. Had that rate of increase continued, in 1900 the native-born population would have numbered about one hundred million, and in 2,000 A. D., it would have increased to eight hundred million. In the United States in 1910, with considerably less than one hundred millions of people, already the alarm has been raised that our land has all been taken up and much of its fertility has been exhausted, so that we are being warned against the danger of insufficient food to supply our rapidly increasing population, while the increased cost of that which is available has become a serious public problem.

Formerly wars, pestilence and famine served to keep down the population; but modern science and the spread of intelligence have increased the average length of life and reduced the death-rate so radically—say to sixteen per thousand—that the figures of the calculation quoted do not correspond to the population of 1900, disregarding the elements we are discussing which have intervened to keep the population down to a possible subsistence basis.

In other words, we come back to the position of Malthus: Population is inevitably limited by the means of subsistence. Given a certain subsistence available at a given place and a given period, capable of supporting a certain number of well-rounded lives, if the total number of lives exceeds the given optimum, the lives of some or all must be curtailed in length or breadth or in both. Beyond a certain point, a rise in the birth-rate entails a rise in the death-rate and a fall in the average standard of living.

1. Emerick, C. F.: Is the Diminishing Birth-Rate Volitional? Pop. Sc. Monthly, January, 1911, p. 71.

2. Nearing, S.: "Race Suicide" vs. Overpopulation, Pop. Sc. Monthly, January, 1911, p. 81.

It would be rash to attempt to find in these essays any basis for finality on the subject. A survey of the fluctuations of opinion, however, offers the comforting suggestion that we may well postpone our panic fears of depopulation and overpopulation until statistical science and the collection of statistics have made a little more progress and are able to inform us with certainty which we really need to fear.

BLACKWATER FEVER AND MALARIA

Although it is generally accepted that blackwater fever —the acute febrile hemoglobinuria of tropical and subtropical regions—is malarial in origin, no means has as yet been found to demonstrate this with certainty; and not infrequently there appear enthusiastic advocates for its specific character. Such a one is Craig,[1] who, in an able review, presents a strong case against the malarial hypothesis. This hypothesis is founded on the following evidence: first, the occurrence of the disease only in malarial districts, and its greatest frequency in localities infested with pernicious malaria; second, the presence of plasmodia in the blood either just before or during the attack; third, the fact that most, if not all, sufferers give a history of previous malarial attacks, and ordinarily have spent a long period in a malaria-infested region; and last, the fact that the blood-picture, a relative increase in large mononuclear cells, is that of malaria. But Craig points out that, although blackwater fever occurs only in malarial districts, many such regions, and even such as are infested with the severe type of the disease, are quite free from cases of the hemoglobinuric affection. As instances of this he cites Italy, where blackwater fever is rare, while the neighboring islands of Sicily and Sardinia suffer severely from it. In India it is restricted to certain limited areas of the malarial regions; in the Philippines, where pernicious malaria is of great prevalence, blackwater fever is almost unknown. Further, instances of house infection are recorded, in which all the cases occurring in a certain neighborhood came from one or two dwellings only. Another significant fact is that the disease appears to be spreading. Thus it is only in late years that the west coast of Africa has suffered from it and in India, too, it has been reported only comparatively recently. Yet both of these regions have been sites of pernicious malaria from time immemorial. That neither previous malarial infection nor long residence in malarial localities is required to produce the disease, is shown fairly conclusively by the citation of numerous cases in which one or the other factor was absent, or both. And the same applies to the occurrence of plasmodia, since instances are recorded in which careful blood-examinations before and during the attack, and even splenic puncture, have failed to reveal them. In regard to the significance of the blood-picture, the same findings occur in other tropical protozoan infections, as sleeping-sickness and kala-azar. As to the quinin theory of the cause of blackwater fever, many cases have been reported in which quinin had not been administered to the sufferer. Craig also affirms that the giving of quinin has no effect on the course, but the general consensus of opinion and statistical evidence do not seem to support him on this point. The evidence for specificity consists in part of the facts already presented. Further, the occurrence of several well-established epidemics speaks strongly in its favor. Finally, the pathology, while not distinctive, differs enough from that of malaria to bear some weight.

Brem,[2] writing still more recently, is inclined to the view that by "blackwater fever, we in reality describe two distinct affections." The one he considers a manifestation of excessive erythrocytic destruction by malarial parasites, and therefore a type of pernicious malaria. This he designates as "pernicious malaria with hemoglobinuria." The other, with less striking evidence of plasmodial infection, he describes as "erythrolytic hemoglobinuria." As to the etiology of this second form, he offers no suggestions, beyond stating that, in some cases, at least, quinin apparently acts as a direct exciting cause. His statistics, as well as others quoted by him, appear to bear out the contention that quinin has a deleterious action in this form.

Finally, the whole subject is complicated by a recent discovery by Urriola,[3] who states that all cases of malaria, however latent, show masses of blood-pigment in the urinary sediment, similar to that announced long ago by Laveran as present in the blood-stream, but not hitherto considered of diagnostic importance. It would appear, however, that the urinary pigment, although of hemic origin, is enough modified to remove it from the scope of hemoglobinuria, since Brem failed to get hemoglobin tests in the urine of numerous mild and moderate cases of malaria.

The whole problem is one that presents unusual obstacles. The difficulty of deciding absolutely as to the occurrence of malaria in any given case is alone enough to delay its solution. And without careful animal experimentation—to the necessity for which Craig calls attention—it is improbable that any absolute decision can be attained.

ANCIENT PROBLEMS OF PHARMACY AND THEIR WARNING

Most physicians of modern times would be quite sure, if they thought about the matter at all, that the pharmaceutic problems which prove so troublesome in our time represent abuses that have crept into medicine because of peculiar developments in the last few generations. Certainly very few would think that these problems—proprietary remedies and their abuse, substitution, counterfeiting of drugs, the use of long, imposing Greek

1. Arch. Int. Med., 1911, vii, 56.

2. Arch. Int. Med., 1911, vii, 153.
3. Semaine méd., 1911, xxxi, 3.

names to make new compounds popular and impressive —were all features of a previous phase of medical history. In this matter the story of medicine at Rome during the early empire is particularly interesting. Social and economic conditions were not very different from ours; indeed, as the Italian historian Ferrero made very clear in his American lectures, they were in many ways remarkably like those of our day and country. If we bear this in mind, it is not so surprising to find that our problems in pharmacy resemble theirs so closely as to be almost a perfect replica. The value of history consists largely in the applicability of its lessons to the after-time; unless we can see the fitness of the application, it becomes scarcely more than a tale that is told. The history of pharmacy, therefore, at Rome, has its special interest at this time.

Pliny the elder, for instance, complains that physicians of his time (the first century after Christ) often bought their remedies already prepared so as to avoid the trouble of preparation. He evidently refers to compounds of various kinds supposed to be curative for various affections; for Friedländer[1] says that "often the physicians did not know the exact ingredients of the compounds that they used and should they desire to make up written prescriptions, would be cheated by the salesmen." Both Galen and Pliny complain of the fact that physicians used "ready-made" medicines instead of original prescriptions carefully prepared by or under the supervision of the physicians themselves. It is evident that the proprietary remedy had come into existence thus early, and that various drug manufacturers had made specialties which physicians, following the line of least resistance, found it easy to prescribe, though men like Pliny and Galen realized very clearly that this was an abdication of one of the most important functions of their profession, which was bound to work harm in the end both to themselves and to their patients.

Galen has much to say with regard to the frauds practiced on physicians by the "cursed dealers," as he calls them, who substituted one drug for another whenever they found it difficult to fill a prescription as it had been ordered. He admits that not infrequently the drug-compounders were themselves the innocent victims of "collectors of herbs who brought saps and flowers and fruits and sprouts into towns" and of others who compounded remedies of various kinds for sale to the pharmacies. He confesses that the ingenious methods of counterfeiting practiced by some of these men would deceive any but the experts. Galen himself, in his younger years, had been a pupil under a man who "forged balsam, Lemnian earth, white flowers of zinc and other rare drugs to perfection and succeeded in making a great deal of money by this means.[1]" Galen even insisted rather emphatically that an imported article was not necessarily genuine or pure, quite as in our day he would probably have proclaimed that being "made in Germany" was not in itself an assurance of scientific or ethical quality. He himself preferred to obtain his drugs from the proper regions and through reliable dealers and friends on whose absolute honesty he could depend. This whole picture of the drug trade in imperial Rome, as Friedländer gives it in a page or two, would read almost like an antedated satire on certain conditions of our time; but it is sober history.

Other details seem even more strangely familiar to physicians of the present time. For instance, many remedies were known by special arbitrary names instead of descriptive names recalling the ingredients. Sometimes they were named after famous physicians who had used the remedies in question or were said to have done so; again, the preparations were named for persons of distinction who actually or supposedly were cured thereby, much as, in our own day, cigars are named for poets, statesmen and actors. The titles of some of these preparations for instance, were "Ointment for Gout, made for Patroculus, Imperial Freedman—Safe Cure"; "Ointment for Aburnius Valens" (probably the famous jurist) called the "expensive ointment"; "Eye Salve used by Florus on Antonia the wife of Drusus [the Emperor's son] after the other doctors had nearly blinded her." Many of these remedies were labeled "instantaneous," "safe," "sure cure," "harmless remedy," and the like. Frequently euphonious names, sometimes from the Greek, were chosen for these remedies—Ambrosia, Anicetum, Nectarium, and the like. The promoters evidently knew the satisfying effect on both physician and patient of a long, mystifying foreign name. George Eliot says that we map out our ignorance in long Greek names; but certainly the pharmaceutic equivalent of "that blessed word Mesopotamia" seldom fails to produce a wonderful feeling of assurance and of confidence in the therapeutic potentialities corresponding to its majestic syllables.

The source of these abuses was just the same in Rome nineteen centuries ago as it is here to-day—greed for money. To use Friedländer's words, "Wealth was the genius of the noisy, restless striving which daily filled the streets and palaces; one universal chase after money as the original good, whence were derived rank, respect and honor. The complaint was just that wealth was the sole criterion and the one aim of Rome." From this universal money-seeking came the approximate commercialization of the professions; hence the abuses that flourished in pharmacy and in medicine. The lesson is complete. The protests of Pliny and of Galen were impressive, but Rome was deteriorating; there was no professional organization to check these abuses, and they increased as Rome declined. Evidently if we are to avoid such unfortunate deterioration in our own time, we must not shrink from recognizing and resisting the evils which do so easily beset commercialized ages like those of the first and the twentieth centuries A. D.

1. Friedländer: Roman Life and Manners Under the Early Empire, New York, E. P. Dutton, p. 176.

Current Comment

MADAME CURIE AND THE ACADEMY OF SCIENCES

The recent candidacy of Mme. Curie for the vacant seat of M. Gernez in the Académie des sciences of France has aroused much interest outside of that country, and the news of her defeat will doubtless be a disappointment to many who seldom feel any concern about the distribution of foreign academic honors. Justly or unjustly, public opinion outside of France will incline to interpret the result of the election as a discrimination, on grounds of sex, against a scientific investigator of high standing. The academy, however, has avoided the responsibility of officially excluding women. As explained by our Paris correspondent in this issue, the agitating question of feminine candidacy was laid before the Institut de France, of which the Académie des sciences is a component part. The institute passed a resolution advising respect for "immutable tradition," but declining to interfere with the autonomy of the five affiliated academies. The Académie des sciences presented Mme. Curie as a candidate, thereby tacitly admitting the principle of the eligibility of women. On the first ballot Mme. Curie received but one vote less than her successful rival. To what degree her defeat is to be attributed to the undoubtedly strong feeling against the admission of women cannot be judged from this distance. Her successful competitor is, we are assured, a member who confers honor on the illustrious body to which he has been elected; and it would doubtless be unfair to ascribe his election chiefly to prejudice against a woman candidate. The narrowness of the margin by which Mme. Curie was defeated suggests that a similar contest might some time have a different ending. The election of so distinguished a woman as Mme. Curie to the Académie des sciences, if that should ever occur, would certainly add to rather than detract from the honor conferred on other members, since it would indicate that no personal consideration outweighed scientific attainments in the selection of members.

VINDICATING THE TUBERCULIN TEST

The report of the milk committee of the Illinois legislature, which was adverse to the tuberculin test, on the ground that a positive reaction is not a reliable indication of tuberculosis in cattle, received a severe body-blow in a test recently made in Chicago. The action of the committee was followed by the introduction into the legislature of a bill (House Bill 55), which seeks to prohibit the enforcement of the tuberculin test by municipalities. This was introduced in the interest of those milk-producers of the state who assert that the test is not conclusive. This assertion has been disputed vigorously by the Chicago health authorities, who have been enforcing this test in the dairies which supply milk to the city of Chicago. The milk-producers, confident of their ability to show the fallacy of the tuberculin test, sent to the Chicago stockyards fourteen cattle that had been found tuberculous by the tuberculin reaction. The cattle were killed and after examination by the state and federal inspectors all were condemned as being seriously infected with tuberculosis. Two cows which had not reacted were found free from tuberculosis. According to the newspapers, tuberculin tests of cows furnishing milk for the Kansas City market show that nearly fifty per cent. are infected, and so many were condemned as temporarily to curtail the milk-supply going to that market. The cattle owners there are likewise protesting against the condemnation of their cattle. Following the Chicago demonstration of the accuracy of the tuberculin reaction in cattle furnished by the opponents of the test, the Illinois legislature should carefully consider this feature of the bill referred to before making it a law. Large numbers of similar demonstrations in this country have shown the relative accuracy of the test. There can be no question of the value of the tuberculin test of cattle, and the passage of a law by the Illinois legislature prohibiting this test and substituting, as proposed, the ordinary clinical tests, would be a distinctly backward step, one not in the interest of the health of the people of the state. The milk-producers of Illinois and adjoining states have an association primarily to further legislation of this character in their own interests, and at a recent meeting, plans were laid for the formation of a national association. Hence the question is likely to become broader than one affecting a single state.

PHARMACEUTICAL JOURNALS AND THE NOSTRUM

We had something to say elsewhere[1] as to the attitude of the pharmaceutical profession and pharmaceutical journals concerning the advertisement and sale of nostrums. Attention was called to two journals which had adopted a policy of consistency, and which were supporting THE JOURNAL'S propaganda against the nostrum evil. It appears from recent utterances against certain widely advertised nostrums that the *Pacific Pharmacist* of San Francisco belongs also in the ranks of those journals which regard professionalism as higher than the good will and patronage of "patent medicine" fakers. In the December (1910) issue—commendably clean in its advertising pages—the *Pacific Pharmacist* continues the publication, under the head of "Propaganda for Drug Reform," of a list of nostrums condemned by the Department of Agriculture under the Food and Drugs Act, and calls "particular attention to cancer and headache fakes." In an editorial on vicious advertising, in the same issue, the *Pharmacist* says: "We cannot think of any good reason why our daily papers should be permitted to continue their vicious advertising." Reference is made to a number of that class of advertisements appearing in a San Francisco daily paper, and the opinion is expressed that such advertising should be made a criminal offense. In the same issue, also, a correspondent, commenting on the work of the Council on Pharmacy and Chemistry of the American Medical Association, says that pharmacists "are in sympathy with those who are trying to eliminate drugless drugs and with those who are endeavoring to make drugs of value to be of standard quality," and that "the representative physicians of the United States recognize in the pharma-

1. THE JOURNAL, Jan. 28, 1911, p. 274.

cists a spirit of cooperation and the ability to assist them in this noble enterprise." Evidently the leaven is working, and ere long other pharmaceutical journals will get in line, and, together with their three pioneer contemporaries, will be able to render most valuable assistance in cleaning up the nostrum business, as it affects both the public on the one hand and the medical and pharmaceutical professions on the other.

GLUTEN FLOUR

In previous issues attention has been called to many so-called gluten flours and their supposed value in the dietary of diabetics. The misconception as to the value of the gluten content, rather than the absence of the carbohydrate element, on which their value really depends in diabetes, was emphasized. It was further pointed out that the regulations concerning the percentage of gluten and of carbohydrates and the branding of such products under the Food and Drugs Act are unsatisfactory and tend to be misleading. In this issue is an abstract of the discussions on the subject of gluten flour at the Second International Congress for the Repression of Frauds. This is a purely commercial body, and its discussions are interesting as showing the attitude of the various members—manufacturers, bakers, pharmacists, physicians—on this subject. The physicians insisted that in making a definition for gluten flour or bread it was just as important, or more important, to state the maximal permissible quantity of carbohydrates as it was to state the permissible minimum of gluten. The definition finally adopted was much more satisfactory than the requirements of our Food and Drugs act, in that it provides that "only breads containing a maximum of 25 per cent. of wheat starch and a minimum of 60 per cent. gluten, calculated on the basis of dry material, shall be called gluten bread." While 25 per cent. is a dangerously high proportion of carbohydrate for a diabetic food, yet it is much safer than many of the so-called diabetic breads and flours at present on the American market. A maximum of 10 per cent. of carbohydrates for all flours or foods advertised for diabetics would, as a legal requirement, do much to protect the sufferers from this disease and would work no hardship on the manufacturer. Further than that, all such products should be plainly labeled so as to show the actual percentage of carbohydrate content. When this is done one of the most disgraceful and dangerous of the many frauds perpetrated by American food manufacturers will have been eliminated.

SANATORIUM TREATMENT OF TUBERCULOSIS

An interesting and encouraging indication of the possibilities of the sanatorium treatment of tuberculosis in the climate of Illinois is afforded by the report of the Edward Sanatorium at Naperville, which we recently summarized in our News Department.[1] In an illustrated pamphlet, the medical director, Dr. T. B. Sachs, reviews what has been accomplished in the four years since the founding of the institution, which consists of a farm of forty acres and the equipment. The latter has been developed until it now comprises a medical building with laboratories, an infirmary, an assembly room, a service hall, open-air shacks, tents, etc., for the accommodation of sixty patients. Modern hygienic and dietetic methods of treatment are in force, two objects being kept in view: the arrest of the tuberculous process, and the restoration of the earning power of the patients. Originally independent, the sanatorium is now conducted under the auspices of the Chicago Tuberculosis Institute. To January, 1911, over 400 patients had passed through the sanatorium, the average stay of each being about four months, and in the report 277 cases are analyzed. The results reported are surprisingly favorable. Of 176 patients in the incipient stage 161 or 91.5 per cent. at the beginning of 1911 were in apparently normal health, with full working capacity, at periods of from six months to three years and nine months since their discharge. In addition, 5.1 per cent. possessed partial working capacity. Of ninety-one moderately advanced cases, 32 patients or 35.1 per cent. had full working capacity, while 16.5 per cent. had partial working capacity. On admission, each patient is studied thoroughly by all the methods of physical diagnosis and the laboratory. Absolute rest is enforced until any constitutional disturbance subsides and nutrition improves; then exercise is gradually introduced, and later graded work becomes a feature. The work is individualized and made agreeable. Recreation and amusement are provided and most of the time of the patient is spent out of doors. The report shows that, even in a climate which seems inimical to the best results in the outdoor treatment of tuberculosis, under a proper study of cases and a proper régime, carefully and intelligently carried out, an excellent showing can be made anywhere in the treatment of tuberculosis, as has also been demonstrated in the Adirondacks and elsewhere. One important effect of such sanatorium treatment is that the patients discharged have received such an education in right living that their influence after returning to their families and friends must be most salutary.

1. THE JOURNAL, Jan. 14, 1911, p. 126.

Medical News

ILLINOIS

Auxiliary Staff at County Hospital.—To facilitate the performance of emergency operations at Cook County Hospital, the Civil Service Commission has appointed six physicians to assist the regular attending staff. The new positions of chief of staff, night surgeon, and medical statistician have been created at the hospital.

Personal.—Dr. Joseph P. Pecival, formerly superintendent of the State Hospital for the Insane, Norfolk, Neb., has been appointed superintendent of the Cook County Institutions, Dunning.——Drs. John A. Graham, George N. Pratt and Hugh N. MacKechnie, Chicago, have been appointed as the voluntary attending medical staff in the Oak Forest Infirmary. One of the new appointees is to visit the institution each day.——The damage suit instituted against Dr. John W. Daugherty, Chillicothe, in which $20,000 was claimed by the plaintiff on account of alleged malpractice, came to an abrupt ending, January 17, as the plaintiff failed to make her case.

Another Suit Against Illinois Board.—It is reported that the Littlejohn College and Hospital, formerly known as the

American College of Osteopathic Medicine and Surgery, has begun mandamus proceedings against the Illinois State Board of Health to secure recognition of that college by the board. The charge is that the board is unlawfully discriminating against that college. The suit filed for a similar purpose by the National Medical University in December, 1909, is still pending but that college is still unrecognized.

Bills Introduced in Legislature.—Two bills providing for a board of examiners in optometry have been introduced in the General Assembly, namely Senate Bill 140, by Mr. Brown, and House Bill 121, by Mr. Hagan. During last week the following bills were introduced: Senate Bill 155, by Mr. Hurburgh, to appropriate $100,000 a year for the College of Medicine of the University of Illinois; House Bill 149, by Mr. Chipperfield, to establish a state surgical institution for children under 14 years; and House Bill 152, by Mr. Perkins, to amend the pure food act.

Chicago

Women Physicians Reorganize.—At a meeting, held in the Fine Arts Building, February 1, by fifty women physicians of Chicago, it was voted to reorganize the Chicago Medical Women's Club. It is intended to launch an educational campaign in which milk, food and health problems will be publicly discussed.

A Saner Fourth.—At a meeting of the Sane Fourth Association, held February 8, it was decided to have a great celebration in Grant Park, and in addition to utilize every small park and public playground. It is intended that each nationality shall participate in the general and special celebrations, that folk songs and dances shall be made special features in certain localities.

Personal.—Dr. Alice Hamilton of the Memorial Institute for Infectious Diseases, who investigated the lead industries in Chicago and Illinois, with reference to lead poisoning, for the Illinois Commission on Occupational Diseases, has undertaken similar work for the federal government.——A prospectus received announces that, after nearly twenty years of labor on an English translation of the "Papyrus Ebers," Dr. Carl H. Von Klein (who may be addressed in care of the John Crerar Library, Chicago) has completed the task and will publish a subscription edition.

KENTUCKY

Medical Society Election.—At the meeting of the Jessamine County Medical Society, held in Nicholasville, Dr. Thomas R. Welch was elected president; Dr. Daniel A. P. Lenick, vice-president, and Dr. J. A. Van Arsdall, secretary-treasurer, all of Nicholasville.

Appropriation for Babies' Milk Fund.—As the result of the plea of Mrs. Litchworth Smith, president of the Babies' Milk Fund Association, made in an address before the fiscal court of Jefferson County, the sum of $1,500 was unanimously voted for the benefit of the association toward its expenses this year.

Moving Pictures for the Insane.—Arrangements have been made by the new state board of control of charitable institutions to install a moving-picture machine at the Central Kentucky Asylum for the Insane, Lakeland. By the contract, patients are to be given two shows a week with six new films at each performance.

Expense Falls on Hospital Commission.—It is announced that the expense attached to the temporary housing of patients, during the construction of the new Louisville City Hospital, must be borne by the Hospital Commission alone. The section in the law which created the Hospital Commission makes it optional with the city whether or not it shall bear the whole or part of the expense attached to the temporary housing of the City Hospital patients.

MARYLAND

Honor System Adopted.—The students of the Medical Department of the University of Maryland have adopted the honor system and have drawn up a code of laws for carrying it out.

Personal.—Dr. James J. Murphy has succeeded Dr. George Wells as chief of the medical staff of Annapolis Emergency Hospital.——Dr. Richard C. Massenburg is reported to be ill with bronchitis at his home in Towson.

Dispensary Report.—At the annual meeting of the Northeastern Dispensary, Baltimore, Dr. Arthur Wegefarth was elected president, and Dr. Alexander D. McConachie, secretary. During the year nearly 20,000 patients were treated at the dispensary; 23,332 prescriptions were filled, and 1,074 visits were made to patients' homes.

New Hospital Buildings.—A stone hospital is to be built at St. Mary's Industrial School near Baltimore to cost about $25,000.——An additional hospital building to accommodate 200 patients is to be erected at the Maryland Tuberculosis Sanatorium. It will contain also quarters for physicians, nurses and help, offices, kitchen and living room.

Health Conference.—At the health conference held in Osler Hall, February 6-11, under the auspices of the Medical and Chirurgical Faculty of Maryland, Dr. William H. Welch presided. Among the many important addresses presented were those by Dr. Woods Hutchinson, New York City, on "How the Public Educates the Medical Profession;" Dr. Henry H. Goddard, Vineland, N. J., on "The Feeble-Minded Child as a Menace to Society, Socially and Morally;" Dr. Lyman F. Kebler, Washington, D. C., on "Advertised Cures for Tuberculosis;" Dr. F. Park Lewis, Buffalo, on "Good Sight as a National Asset;" Dr. Cressy L. Wilbur, on "Unrecorded Babies;" Dr. Llewellys F. Barker, Baltimore, on "Prevention of Nervousness in Children and the Protection of the Nervous Child," and Dr. Ronald Godfrey Freeman, New York City, on "The Relation of Good Milk to Infant Mortality."

MASSACHUSETTS

Alumni Meeting.—The annual meeting of the Boston City Hospital Alumni Association was held February 15. In the morning there were demonstrations of cases in the hospital, followed by a luncheon in the library.

Association of Boards of Health Meets.—The Massachusetts Association of Boards of Health, held its annual meeting, January 26, and elected the following officers: president, Dr. Henry P. Walcott, Cambridge; vice-presidents, Drs. Samuel H. Durgin, Boston, and Charles V. Chapin, Providence, R. I.; secretary, James C. Coffey, and treasurer, James B. Field.

Personal.—Dr. Dwight S. Woodworth has been appointed a member of the board of health of Fitchburg.——The following appointments have been made to the medical staff of the Tuberculosis Commission of Lawrence: chief of staff, Dr. Charles G. Carleton; ophthalmologists, Drs. William H. Merrill and Frank A. Conlon, and medical staff, Drs. John J. Bartley, J. Forrest Burnham, John J. O'Sullivan, Harry H. Nevers, John H. Tobin, Victor A. Reed, George B. Sargent and Granville S. Allen.

Medical Council Meeting.—At the annual meeting of the Council of the Massachusetts Medical Society, Dr. David L. Edsall, St. Louis, formerly of Philadelphia, was appointed the Shattuck Lecturer at the annual meeting of the society in June, 1911. The following delegates were elected to American Medical Association: Dr. Frederick H. Thompson, Fitchburg; Frank G. Wheatley, North Abington, and Hugh Cabot, Boston; alternates, Drs. Isaac S. F. Dodd, Pittsfield; Allen Greenwood, Waltham, and Fred T. Murphy, Boston; Maine Medical Association: Drs. George K. Blair, Salem, and Herbert W. Manahan, Lawrence; New Hampshire Medical Society: Dr. George Z. Goodell, Salem, and Omer P. Porter, Lowell; Rhode Island Medical Society: Drs. Allen Greenwood, Waltham, and Nathaniel S. Hunting, Quincy; Connecticut State Medical Society: Drs. Everett A. Bates, Springfield, and Samuel B. Woodward, Worcester; council on medical education of the American Medical Association: Dr. Harold C. Ernst, Boston, and alternate, Dr. Horace D. Arnold, Boston; auditor, Dr. Chauncey C. Sheldon, Lynn, and member of committee on publication to succeed Dr. John C. Munro, deceased, Dr. Edward W. Taylor, Boston. It was voted to pay the mileage of delegates to meetings of the American Medical Association, and to instruct delegates to make reports to the council after the meeting. It was also voted that on the first annual meeting of the society each section should elect its officers for the coming year. It was voted that the revised list of medical schools and colleges in the United States and Canada be the standard on which future fellowship in the Massachusetts Medical Society be based.

MICHIGAN

Clinic at Harper Hospital.—The medical staff of Harper Hospital, Detroit, will give medical, surgical and laboratory clinics at the institution, February 24 and 25 from 8 a. m. to 5 p. m. The medical profession is invited to be present. It is the aim of the staff to hold several of these clinics each year. The program includes medical and surgical clinics and practical laboratory work. No charges or fees are made for these clinics.

Personal.—Dr. John V. Frazier, Lapeer, has been appointed a member of the Board of Control of the State Home for the Feeble-Minded in that city.——Dr. Clark E. Spencer, Port Huron, is reported to be seriously ill at his home.——Dr. Don D. Knapp has been appointed health officer of Flint, vice Dr. Myron A. Patterson, resigned.——Dr. John H. Kellogg, Battle Creek, has been appointed a member of the State Board of Health, vice Dr. Angus McLean, Detroit, and Dr. Thomas M. Koon, Grand Rapids, has succeeded Dr. Malcolm C. Sinclair, Grand Rapids, as a member of the board.

MISSOURI

Decide Site for Children's Hospital.—The Hospital and Health Board of Kansas City have decided to erect the new children's hospital on the southeast corner of the new general hospital grounds.

Committee on Public Health.—Dr. Jefferson D. Griffith, Kansas City, president of the Jackson County Medical Society, has appointed the following committee on public health and registration: Dr. Franklin E. Murphy, Andrew W. McAlester and Rush E. Castelaw. One member of this committee, will, it is expected, meet with the mayor at the executive committee meeting of the city council each Monday morning.

Personal.—A fire at Denver, February 4, totally destroyed the office of Dr. Calvin F. Forbis.——Dr. and Mrs. Benjamin Belove, Kansas City, have returned after two years abroad. ——Dr. James R. Hull has sold his interest in the Monroe Hospital, Monroe City, to Dr. John N. Southern.——Dr. Jesse E. Hunt, school inspector of Kansas City, has resigned.—— Dr. John M. Doyle, St. Joseph, physician of Buchanan County, has resigned and has been succeeded by Dr. James K. Graham, St. Joseph.——Dr. William C. West, Kansas City, while making a professional call, was attacked by a negro, whom he put under arrest. He was stabbed twice in the breast but not seriously injured.

St. Louis

Changes at St. Louis University.—At the St. Louis University School of Medicine, Dr. Charles Hugh Neilson, formerly professor of physiologic chemistry, has been advanced to the chair of medicine which has been placed on a salary basis. It is planned to have other clinical chairs likewise placed on a salaried basis so that the appointees may devote their entire time to the work in their departments.

Acquitted of Failure to Report Disease.—Dr. John H. Kern, charged with having failed to report a case of chicken-pox to the board of health, and fined $25 in the police court, was discharged by Judge Miller in the court of criminal correction. Judge Miller, in his decision, says in effect that a physician is not a scout or detective, and it is not his business to go into homes and ascertain the existence of a contagious disease, even though he may suspect that such disease exists.

Personal.—Dr. Henry Hanson, Webster Groves, has been appointed physician of St. Louis County.——Dr. Charles H. Dixon, who has been seriously ill in Cleveland, is reported out of danger.——Dr. Amand N. Ravold, medical director of the Missouri State Life Insurance Company, has resigned.——Dr. George Buckner is reported to be seriously ill with septicemia. ——Washington University announced, February 10, the appointment of Dr. Fred T. Murphy, Boston, as professor of surgery in its medical department.

NEW YORK

Personal.—Dr. Anna M. Stuart has been appointed city bacteriologist of Elmira.——At the meeting of the Elmira Academy of Medicine, February 1, Dr. Arthur K. Bennett, who recently returned after ten years missionary service in Persia, read a paper on vesical calculus, with special reference to conditions found in Persia.

Newell in Rochester.—At the meeting of the Section of Obstetrics, Gynecology and Pediatrics of the Rochester Academy of Medicine, February 15, Dr. Franklin S. Newell, Boston, delivered the address of the evening on "The Requirements of Modern Obstetrics." A dinner was given in honor of Dr. Newell prior to the meeting.

Macdonald Memorial.—An association has been formed for the purpose of raising funds for a memorial for Dr. Willis G. Macdonald, and Governor Dix has been named president. A meeting was held in Albany, on February 3, where plans were discussed for raising the sum of $100,000. The memorial will probably take the form of a laboratory for Albany Medical College.

Probing State Hospitals.—The stewards of the various state hospitals held a conference at Utica on January 21, with a representative of the auditing committee which is engaged in investigating the affairs of the state hospitals. A searching investigation is being made and recommendations were made as to improvements in methods and system of accounts and caring for supplies and property.

Plan for Milk Commission.—As a result of the disclosures in connection with the milk business, especially in New York City, a bill has been introduced into the legislature by Assemblyman Foley, which provides for the appointment of a milk commission to have general supervision over the milk dealers in the state and over persons buying and selling milk in cities of the first class, the commission to consist of three persons appointed by the governor at an annual salary of $5,000 and the principal office to be in New York City. The measure provides that the commission shall have the power to investigate the quality and price of milk and to fix standards of quality. The bill carries an appropriation of $5,000.

Lecture on Public Health.—Monroe County Medical Society plans to give Rochester the benefit of a series of free lectures on preventive medicine and public health. The series will consist of eight lectures given on alternate Friday nights during February, March and April. The first lecture was given by Dr. F. Park Lewis, Buffalo, February 3, on "Conservation of Vision." The subsequent lectures are on "Occupational Diseases and Their Prevention," by Dr. Eugene H. Porter, state health commissioner; "Deformities and Their Prevention," Dr. Wisner R. Townsend, New York City; "Cancer and Its Cause and Prevention," by Drs. William S. Bainbridge, New York City, and Harvey R. Gaylord, Buffalo, and "Prevention of Insanity," which will be given in cooperation with the State Charities Aid Association.

New York City

Lying-In Hospital Alumni Meet.—At the meeting of the Alumni Association of the Lying-In Hospital of the City of New York, held at the Harvard Club, February 14, the paper of the evening was read by Dr. John O. Polak, Brooklyn, on "What Can We Expect From the Vaccine Treatment of Puerperal Sepsis."

Personal.—At the eighteenth annual dinner of the Long Island Medical Society, held in Brooklyn, February 7, the guest of honor was Dr. John O. Polak, one of the oldest members of the association.——Dr. William S. Bellows, Jamaica, who has been traveling in search of health for the last five months, has returned home.

Crusade Against Spitters.—Health Commissioner Lederle has announced that 160 persons have been arrested since January 1 in the crusade against the spitting nuisance. Of sixty persons arrested during the first week in February, forty were fined and in sixteen sentence was suspended. Only fourteen out of the 160 have been discharged outright.

Annual Report of Dispensary.—Dr. Alfred H. Riedel, house physician and registrar of the North-Western Dispensary, reports that this is the only institution in the city of New York which furnishes everything absolutely free to its applicants. During 1910 the total number of patients treated in the clinics was 17,538; the total number of visits made to patients at their homes was 9,178.

Medical Lecture Series.—The Educational Alliance has planned a series of lectures on medical topics to be given during February, March and April at Alliance Hall. The first lecture will be given by Dr. William M. Polk, president of the Academy of Medicine, on February 23, on "Medical Ethics and Their Application to Practice;" the second on March 30, on "Gynecologic Operations by the General Practitioner," by a lecturer to be announced later, and a third on April 23, by Dr. J. Brettauer on the "Secret Division of Fees."

Infantile Paralysis.—Health Commissioner Lederle has announced that since the Health Department, on November 1 last ordered that physicians report all cases of infantile paralysis as a communicable disease, eighteen cases have come to the attention of the Health Department. The division of communicable diseases has been giving special attention to this affection. Inspectors have been instructed to be very careful and exact in obtaining information as to periods of incubation and infectivity, since negative may be as important as positive findings.

Medical Society Secures Appeal.—A new trial was ordered in the appelate division of the supreme court, February 3. in favor of the New York County Medical Society, which appealed from a judgment of $7,500 obtained against it by Paul Schmitt, charged with practicing medicine without legal authority. The court, in its opinion, stated that at the trial the evidence established in substance that the real plain-

tiff was not authorized to practice; that he held himself out as Dr. Schmitt and claimed that he could cure glanders; that an article appeared in a newspaper to the effect that a Dr. Gannett was in Bellevue Hospital suffering from glanders, and that this article was shown to the plaintiff by one Conrad, who, at the time, said he had written to Dr. Gannett, the letter being signed "The Department of Glanderine, per C. Conradus, Secretary," offering to cure him free of charge.

Approves Directory.—At a meeting of the Medical Society of the County of New York, January 23, a preamble and resolutions were adopted setting forth that a communication had been received from the Medical Society of the County of Chemung, advocating the discontinuance of the Tri-State Medical Directory, similar communications having been sent to other county medical societies in the state; recording the disapproval of the Medical Society of the County of New York of any effort to discontinue the directory; instructing its delegates to the state society to oppose strenuously any effort to discontinue the directory, and directing that a copy of the resolutions and the reasons therefor be sent to the secretaries of the county medical societies of the state, and the officers and members of the house of delegates. These reasons are that the directory is of supreme importance to the physicians of the cities which furnish the overwhelming majority of the membership of the state society; that the abolition of the directory would cause a loss of membership; that the employment of the directory is reciprocal between city and country practitioners; that the directory has proved to be a most efficient collector, as members are anxious to appear in good standing; that the directory is regarded as authoritative by boards of health, life insurance companies and other business concerns; that the directory is the most potent weapon against quackery; that the directory is an absolute necessity to larger medical societies; that the expense charged to the directory may be misleading in some particulars, and is counterbalanced in some measure by the income from advertising and sales; and that the directory is one of the most important material benefits in building up a powerful organization of medical societies.

NORTH CAROLINA

Personal.—Wake Forest College has secured Dr. W. T. Carstarphen for the chair of physiology in the department of medicine.——Dr. Franklin W. Griffith has located in Asheville.

Hookworm in Asheville.—Dr. Claude L. Pridgeon, one of the Hookworm Laboratory workers, reports, as the result of the examination of scholars in Asheville City graded school, that from 25 to 40 per cent. are infected with the hookworm.

Society Meetings.—At the annual meeting and banquet of the Buncombe County Medical Society, held in Asheville, the following officers were elected: president, Dr. Clyde E. Cotton, Black Mountain; vice-president, Dr. Charles L. Minor, Asheville; secretary-treasurer, Dr. Gaillard S. Tennent, Asheville, and Drs. S. Westray Battle, Marshall H. Fletcher and Carl V. Reynolds, all of Asheville, delegates to the State Medical Society.——Wake County Medical Society at its annual meeting held in Raleigh, January 12, elected Dr. J. A. J. Penny, Roger's Store, president: Dr. Joel Whitaker, Raleigh, vice-president; Dr. William C. Horton, secretary, and Dr. Kemp P. Battle, Jr., treasurer.

OHIO

Personal.—Dr. George W. Crile has succeeded Dr. Dudley P. Allen as chief of the visiting and surgical staff of Lakeside Hospital, Cleveland.——Dr. Andrew J. Timberman, Columbus, has returned after a trip to India.——Dr. Charles O. Probst, secretary of the State Board of Health, Columbus, is reported to be ill with influenza.——Dr. Solomon B. Hiner, Lima, is reported to be seriously ill with pneumonia.——Dr. Jacob J. Coons, Columbus, has been appointed pathologist of the State Board of Health.——Dr. Oscar H. Sellenings has succeeded Dr. Jacob A. Stout as president of the Columbus Board of Health.

Elections.—At the annual meeting of the Cleveland Medical Library Association, the following officers were elected: president, Dr. Charles B. Parker; vice-president, Dr. Benjamin L. Milliken, and secretary, Dr. Henry L. Sanford. It was announced that the sum of $150 has been offered by a friend of the library for a prize for the best medical paper on any subject in medicine and surgery to be submitted to a committee of judges before September 1, the competition to be open only to members of the library who have graduated within the last ten years.——At the annual meeting of the Lakeside Hospital Alumni Association, held January 18, the annual address was delivered by Dr. Alexander Primrose, Toronto. Dr. Henry L. Sanford was elected president; Dr. Arthur H. Bill, vice-president, and Dr. Gilchrist, secretary-treasurer.

Cincinnati

New Board of Health Official.—The Cincinnati Board of Health, at a recent meeting, established the position of kitchen inspector, the position to be filled by a woman at a salary of $600 a year.

Report of Antituberculosis League.—The financial report of the Cincinnati Antituberculosis League shows total receipts of $22,777.96, and disbursements of $6,017.68. Dr. Otto P. Geier was elected president; Dr. Samuel Iglauer, secretary, and Drs. Samuel E. Allen, John M. Withrow, Edwin W. Mitchell, Albert Faller, H. Kennon Dunham and William H. Strietman, trustees.

PENNSYLVANIA

Officers Elected.—At the organization of the Allegheny Valley Branch of the Allegheny County Medical Society, the following officers were elected: President, Dr. Adam C. Davis, Hites; vice-president Dr. William F. Ross, New Kensington; clerk, Dr. Nannie M. Latimer, Tarentum; and treasurer, Dr. Thomas E. McConnell, Parnassus.

The Afflicted.—While Dr. David H. Bemis, West Middletown, was making a professional call, his horse slipped and fell on him, fracturing his right leg.——Dr. Edward G. Husler, Carnegie, is in the West Penn. Hospital, Pittsburg, suffering from cerebral hemorrhage.——Dr. Wilmer R. Batt, Harrisburg, is reported to be convalescent after an operation for appendicitis.

State to Adjust Hospital Appropriations.—In order to adjust state appropriations to hospitals, the house appropriation committee has obtained a report showing the number of free days of treatment given by each hospital of the state in the last two years and Governor Tener and legislative leaders are agreed that state money shall go largely to hospitals giving most public benefit.

State Aid for Charity.—The preliminary report of the Board of Commissioners of Public Charities suggests that steps be taken for the examination of the several systems of children's aid as now dispensed, with the view to the establishment of a uniform system on a more substantial and exalted plane. The amount asked by Philadelphia institutions was $4,772,000, and the amount recommended for distribution by the board was $2,252,000.

Personal.—Dr. Samuel G. Dixon, Harrisburg, has been reappointed state health commissioner.——Dr. Ira J. Dunn, Erie, has returned after six months abroad.——Dr. James F. Edwards, superintendent of infectious diseases, has resigned the chairmanship of the Pittsburg Tuberculosis Commission.——Dr. George R. Vernon, president of the Clifton Heights Board of Health, has resigned.——Dr. John Todd has been reelected president of the Pottstown board of health for the eighteenth consecutive term.

Philadelphia

Addition to Hospital Opened.—The children's building of the Samaritan Hospital was opened January 19. The new building is erected to the memory of the late James L. Miles, and is the latest annex of the hospital. It contains, in addition to the children's ward, a large number of private rooms.

Statue for College of Physicians.—A heroic-sized statue of the Greek physician, Æsculapius, cut in a beautiful block of Carrara marble by the Roman sculptor, Maneti, will be presented to the College of Physicians at its next meeting. The statue is a gift of Dr. Richard H. Harte, a member of the college, and was originally intended to occupy a niche at the first landing of the marble staircase, but it is thought that it may have to be erected elsewhere, owing to its great size and weight.

Census of Defective Children.—The census of defective children in the public schools of the city is now complete and shows that there are 11,543 mentally deficient pupils. Three kinds of deficiencies are considered in the report: First, the physically deficient, embracing the blind, deaf, speech defectives, crippled and epileptics; second, the mentally deficient, backward, feeble-minded and imbecile and third, the morally deficient, truants and incorrigibles. The first class, backward children who require instruction by special methods in small special classes, number 1,857 boys and 1,063 girls; and dull children, who would be benefited by special instruction, 3,362 boys and 3,241 girls; class 2, feeble-minded children who should properly be in custodial institutions, 287 boys and 155

girls; girls 3, truant, incorrigible and vicious children of defective mentality, who should be segregated in special schools, 387 boys and 607 girls; truant, incorrigible and vicious children of fair mentality who should be segregated in special schools, 1,082 boys and 40 girls.

Personal.—Dr. S. Weir Mitchell has been renominated as a member of the board of managers of the University Museum. ——Dr. George W. Merscher, chief resident physician of the Germantown Hospital, was operated on in that institution, February 7, for appendicitis.——Dr. Joseph Walsh has returned from a three months' tour of Egypt and the Orient. ——Dr. Owen Copp, Brookline, Mass., for twelve years head of the Massachusetts State Board of Insanity, has been appointed physician-in-chief and superintendent of the Pennsylvania Hospital for the Insane, known as Kirkbride's.—— Drs. Charles K. Mills and William G. Spiller have been elected foreign corresponding members of the Paris Society of Neurology.——Dr. Charles Furbush, chairman of the milk Commission, has been appointed by Mayor Reyburn to represent Philadelphia at the International Exhibition on Hygiene, to be held in Dresden in May.——Dr. Edward A. Spitzka, professor of general anatomy in the Jefferson Medical College, is recovering from a serious attack of blood poisoning. ——Dr. Jesse O. Arnold has been elected president of the Samaritan Hospital Medical Club.——Dr. J. William White has been made a trustee of the University of Pennsylvania; Dr. John B. Deaver, clinical professor of surgery, and Dr. Milton B. Hartzell, professor of dermatology.

Children's Hospital Plans Completed.—The architects have completed plans for the group of buildings to be erected at Eighteenth, Fitzwater and Bainbridge Streets, for the Children's Hospital, the cost of which, when completed, will be $500,000. The group will consist of an administration building, dispensary, nurses' home and ward building in the Georgian style of architecture, fire-proof and set well within its own grounds and surrounded by an open iron fence. The site measures 308x203 ft., includes half a block and was donated by Eckley B. Coxe, Jr., one of the board of managers, who gave $100,000 for the purpose. Several houses have since been purchased for space for a power plant, laundry, etc. The buildings will conform to the latest ideas in hospital construction; covered passageways join the various buildings, forming elevated walks free from dampness; wards light and airy, three roof gardens for convalescents and thorough screening for the exclusion of flies.——Mrs. Anne McMichael Hoyt has conveyed to the Children's Hospital the residence at the southeast corner of Twenty-Second and Chancellor Streets, with a stable in the rear. These properties were presented to the hospital, which they adjoin, as a memorial to her deceased father, Morton McMichael. This gift greatly enhances the value of the present hospital, the sale of which will give fully half the money required for the new buildings.

Society Notes.—At the annual meeting of the Philadelphia Neurological Society, January 27, the following officers were elected: president, Dr. Alfred R. Allen; vice-presidents, Drs. John H. W. Rhein, and Samuel D. Ingham; secretary, Dr. George E. Price; treasurer, Dr. S. DeWitt Ludlum; and councilors, Drs. James H. Lloyd, H. H. Donaldson, and Francis X. Dercum.——The physicians and druggists of the northern section of the city have organized the Northern Medical League for the purpose of furthering the mutual interests of its members, financially, scientifically and to build up a better ethical relationship between the two professions. Bi-monthly meetings will be held and the following officers have been elected: President, M. B. Loeb; vice-president, G. Azoff; secretary, Dr. Harry S. Snyderman; treasurer, Dr. Harry A. Stembler.——At a banquet February 6, the Northwestern Medical Society changed its name to "The Philadelphia Clinical Association," and elected the following officers: president, Dr. G. Morton Illman; vice-president, Dr. J. Edward Wallis; secretary, Dr. Harry Hudson; treasurer, Dr. William McKeage; executive committee, Drs. Harry A. Duncan, Daniel Longaker and Moses Behrend; board of censors, Drs. Samuel M. Wilson, Lewis S. Somers and Winslow Drummond.——The new officers for 1911 for the section on otology and laryngology of the College of Physicians are Dr. Arthur W. Watson, chairman, and Dr. Ralph Butler, clerk.——At the recent meeting of the Physicians' Motor Club, the following officers were elected for 1911: president, Dr. S. Leon Gans; vice-presidents, Dr. L. Webster Fox, Dr. J. J. Rebrecht, Dr. Richard C. Norris; secretary, Dr. J. Gurney Taylor; treasurer, Dr. Lewis H. Adler, Jr.; solicitor, B. Douglas Bartlett; directors for 3 years: Drs. Sylvester J. Deehan and H. Augustus Wilson; for 2 years: Drs. Ernest W. Kelsey and Francis J. Kelly; for 1 year: Drs. T. J. Ellinger and E. S. Saylor; for four years: Drs. Charles R. Haig, Jr., and Ellwood R. Kirby.——The section on ophthalmology of the College of Physicians elected Dr. William M. Sweet chairman and Dr. Thomas B. Holloway, clerk.

TEXAS

Medical Association Organized.—The Lavacca County Medical Association has been organized at Halletsville with Dr. Paul Renger, president, and Dr. W. W. Shropshire, secretary.

State Board Election.—At the first meeting of the State Board of Medical Examiners, held in Austin, February 7, organization was perfected and the following officers were elected: president, Dr. William B. Collins, Lovelady; vice-president, Dr. Marquis E. Daniel, Honey Grove, and secretary, Dr. John D. Mitchell, Fort Worth.

State Board Appointments.—Dr. Ralph Steiner, Austin, has been appointed state health officer, and Drs. Benjamin M. Worsham, El Paso; William L. Crosthwaite, Holland; William B. Collins, Lovelady; George L. Baber, Winnsboro; John H. Evans, Palestine, and James D. Osborn, Cleburne, members of the State Board of Health, and John E. Rosser, Austin, registrar of vital statistics.

Personal.—In a fire at Rusk, recently, Drs. Andrew H. McCord and John F. Johnson lost their office furniture, books and instruments.——Dr. Robert M. Wickline has succeeded Dr. Louis H. Kirk, resigned, as health officer of Austin.—— Drs. Hugo V. Heblin, Fort Worth, and I. Newton Suttle, Corsicana, have been appointed first lieutenants and assistant surgeons in the Medical Corps, Texas National Guard.

New Sanitariums.—Dr. Frank L. Barnes, Trinity, is about to erect a sanitarium at Trinity to cost $15,000.——Dr. Francis G. Floeckinger is building a sanitarium in Taylor, to cost $15,000.——Dr. James A. Caldwell, McKinney, has let the contract for his new sanitarium which is to be completed in May.——The control of the Baptist Sanitarium, Houston, has formally passed to the new company, to which a charter has been issued under the name Baptist Sanitarium and Hospital.

GENERAL

New President of Sanitary Commission.—Dr. Meverell K. Allen, Louisville, has been elected president of the Ohio River Sanitary Commission, vice Dr. Robert E. Vickers, Huntington, W. Va., resigned.

Physicians to Meet.—The twenty-third semi-annual meeting of the Missouri Valley Medical Society will be held in St. Joseph, Mo., March 16-18, under the presidency of Dr. Donald Macrae, Council Bluffs, Ia. Drs. Charles H. Mayo, Rochester, Minn., and Heinrich Stern, New York City, will deliver the addresses on surgery and medicine, respectively.——It is announced that the next annual meeting of the Association of State and Territorial Health Officers will be held in San Francisco, June 24-26, and that a joint meeting of the health officers of the United States and Canada will follow.——The fourteenth annual meeting of the American Gastro-Enterological Association will be held in Philadelphia, April 19 and 20. Among the more important papers on the preliminary program are those on "Stretching of the Pylorus in Benign Stenosis," by Dr. Max Einhorn, New York City; "Operative Treatment of Impermeable Cardiospasm," by Dr. Willy Meyer, New York City; "The Relation of Symptoms to Pathologic Findings in Cancer and Ulcer of the Stomach," by Dr. Joseph C. Bloodgood, Baltimore, and papers on "Duodenal Ulcer," by Drs. John A. Lichty, Pittsburg; James T. Pilcher, Brooklyn, N. Y., and Lewis Brinton, Philadelphia.

Manufacture and Distribution of Meningitis Serum.—The Rockefeller Institute for Medical Research now gives notice that it has discontinued the general distribution of antimeningitis serum which it has undertaken without charge ever since the discovery of this remedy, and will now devote to other lines of investigation the funds hitherto needed for gratuitous distribution of the serum, handing over to the public health authorities of municipalities and states, and to commercial establishments the routine preparation of the serum for general use. The Board of Health of the City of New York has undertaken the regular production of the serum and will provide for free distribution to all hospitals and to all physicians who apply for it. Statistics show that the death rate from cerebrospinal meningitis has been reduced to less than one-third of its former amount by the early use of antimeningitis serum. The serum is administered by being injected into the spinal canal by means of lumbar puncture, an operation which is also required to secure the fluid for bacteriologic diagnosis, and several separate injections are required in treating a patient. The effective employment of the serum is likely therefore to

be restricted on account of the experience and skill required in the administration, and the high cost of the commercial product, unless the preparation, distribution, and, when necessary, administration are undertaken by state and municipal authorities.

Memorial to the Late Dr. Howard T. Ricketts.—The Mexican government has had Dr. Ricketts' works on Mexican typhus collected and published in Spanish in a handsome volume of over 135 pages entitled, "Howard Taylor Ricketts y sus Trabajos sobre el Tabardillo," with portrait and tribute to the memory of "the heroic research worker who died in consequence of tabardillo contracted in the course of his study of that disease." The volume contains the official documents relating to his death, his special articles written in collaboration with Dr. Russell M. Wilder on the etiology of the disease, and which were published in THE JOURNAL, and, thirdly, the addresses delivered at the unveiling of the memorial tablet in the laboratory at Mexico where Dr. Ricketts had carried on part of his research work. Copies of the memorial volume are to be presented by the Mexican government to the "principal universities, scientific societies, libraries and medical publications of the nations friendly to Mexico, and also to all the national Mexican scientific institutions." The volume opens with the official communication from the secretary of the department to Mrs. Ricketts informing her that the laboratory in which Dr. Ricketts had worked was to be renamed after him, that the scientific institutes in the City of Mexico were to be draped in mourning for three days, that a representative body of members of the faculties was to attend the funeral and cablegrams of condolence sent to the presidents of the universities of Chicago and Pennsylvania; the replies received are also given.

FOREIGN NEWS

Centennial of the Stockholm Medical School.—The Karolinska Medico-Kirurgiska Institutet at Stockholm recently celebrated its hundredth anniversary, concluding the festivities with the bestowing of honorary degrees on a number of foreign scientists. Five members of the faculty are on the board which awards the Nobel prizes.

The Nobel Prizes.—As our readers know, the Nobel prize fund awards five prizes each year averaging from $38,000 to $40,000 each. Since 1900 nearly two millions have been thus distributed to leaders in physics, literature, promotion of peace, medicine and chemistry. The list of the scientific recipients forms an international Hall of Fame, the chemists thus honored being van't Hoff, E. Fischer, Arrhenius, Ramsay, Baeyer, Moissan, E. Buchner, E. Rutherford, W. Ostwald, and the 1910 recipient, O. Wallach, professor of chemistry at the university of Göttingen. The recipients of the medicine prize have been von Behring, D. Ross, Finsen, Pawlow, Koch, Cajal and Golgi, Laveran, Ehrlich and Metchnikoff, Kocher and the latest recipient, A. Kossel, professor of physiology at the university of Heidelberg. The last physics prize was awarded to van der Waals, professor of physics at the university of Amsterdam, the last literature prize to P. J. L. Heyse of Germany, and the peace prize to the International Peace Bureau at Berne. The balance between the various countries has been maintained with remarkable impartiality but the majority of the prizes have gone to Germany. Only two have crossed the Atlantic, the peace prize given to President Roosevelt and the physics prize in 1907 to Professor Michelsen of the University of Chicago. It is a question whether the design of the founder of the prize fund has been realized to date; the awards have gone to men who were already resting on their laurels and the prizes have not served to foster new research to any extent. The committee in charge of the awards pays no attention to personal applications for prizes; the applications to be considered must come from scientific societies, institutions or other organized authority. It is possible that the greater preponderance of prize-winners in certain nationalities is because their institutions and societies have taken greater pains to present the claims of candidates in their respective nations.

CANADA

Brown Memorial Fund.—More than $10,000 has been subscribed to the memorial fund of the late Dr. Arthur A. Brown, Montreal, and it has been decided to endow a scholarship at McGill University.

Investigation of Typhoid Fever in Lumber Camps.—Senator De Veber, M.D., has secured an appropriation of $500 from the Dominion government for his committee to investigate typhoid fever in lumber and railway construction camps.

New Provincial Board of Health.—The following comprises the new Board of Health of the Province of Ontario: Chairman, Dr. Adam H. Wright, Toronto; chief health officer of the province and secretary of the board, Dr. J. W. S. McCullough, Toronto; and Drs. David B. Bentley, Sarnia; George Clinton, Belleville; William H. Howey, Sudbury, and James Roberts, Hamilton.

Hospital Notes.—Arrangements have been made whereby the Protestant Hospital for the Insane, Quebec, will receive $142 per patient each year from the government for a period of fifteen years.——In a suit brought for damages by a patient of Notre Dame Hospital, the hospital has won the victory.——The Charlotte Eleanor Englehart Hospital, Petrolia, has recently been opened.

Plans of Toronto Health Officer.—Dr. Charles J. C. O. Hasting, medical health officer of Toronto, estimates the expenses of his department at $159,000 for the current year. He contemplates the reorganization of the Toronto Health Department, the establishment, in addition to the chief of laboratories, of a secretary of health, bureaus of vital statistics, contagious disease and food inspection, hospital and ambulance service. and sanitation and a school for sanitary instruction.

Personal.—Sir Wilfred Thomaston Grenfell, the medical missionary of the Labrador coast, has been selected as the William Belden Noble lecturer at Harvard University for 1911 and 1912.——Dr. George R. McDonagh, Toronto, is taking a trip to Barbados.——Dr. William E. Struthers, Toronto, has been appointed chief medical inspector of schools.——Dr. John N. E. Brown, superintendent of Toronto General Hospital, has resigned and will study hospital administration abroad.——Dr. Fred J. Tees has resigned as superintendent of the Montreal General Hospital, and has been succeeded by Dr. George Shanks.——Dr. Louis Laberge has been retained as health officer of Montreal.

Toronto Demands License Power.—The dean of the Medical Department of Toronto University, in his annual report, advocates that the power of the Ontario Medical Council be curtailed as regards the standard of medical education and examination. He claims that the work of the medical department is hampered, owing to the fact that the council does not set a high standard for qualification and examination. An effort is being made by the university authorities to have the legislature pass an act whereby a graduate in medicine from Toronto University may enter at once into the practice of medicine without any further examination by the council.——A delegation from Queen's University, Kingston, has gone to Toronto to oppose the application of Toronto University that it be allowed to grant licenses to its graduates to practice medicine without passing the examination of the Ontario Medical Council.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Jan. 27, 1911.

The Candidacy of Mme. Curie and the Election of Dr. Branly to the Academy of Sciences

The candidacy of Mme. Curie (THE JOURNAL, Jan. 7, 1911, p. 53) brought up the question of the eligibility of women to the Institut de France, which was warmly discussed at the quarterly session of the five academies. A resolution was finally passed to the effect that it appeared altogether wise to respect immutable tradition on this point, but that the assembly did not assume to prescribe this course to the various individual academies. The Académie des sciences therefore presented Mme. Curie in the first rank of the list of candidates in the section of physics; in the second rank were presented Dr. Branly and four other candidates, among them Dr. Broca, *agrégé* professor at the Faculté de médecine, On January 23, the academy held the election. The contest narrowed down to Mme. Curie and Dr. Branly. There were fifty-eight voters. On the first ballot, Mme. Curie received twenty-eight votes and Dr. Branly twenty-nine. Dr. Branly, having received thirty votes or a majority on the second ballot, was elected.

Edouard Branly was born in Amiens in 1846. He received the degree of doctor of science in 1873, and was soon appointed professor of physics at the Institut catholique. In 1882, he received the degree of doctor of medicine. The researches which have brought him his greatest renown pertain to radioconductivity and thereby to wireless telegraphy. It may be said that the latter was rendered possible by the work of Branly, and the fact has been recognized by Marconi himself. If, as d'Arsonval says, every academy, whatever the number

of its sections, really comprises only two classes of members, those who honor it, and those who are honored by it, it must be acknowledged that Branly belongs incontestably to the first category.

Salvarsan (606) and Syphilitic Nephritis

In the session of the Société médicale des hôpitaux, on January 20, Professor Widal and M. Javal made a report on the treatment by salvarsan of a patient with syphilitic nephritis, who for fourteen months had had an abundant albuminuria of from 10 to 14 gm. per liter. In the seven days following the administration of the drug (0.6 gm. by intravenous injection) the albuminuria presented no appreciable change; from the eighth to the seventeenth day it diminished from 10 gm. to 2.5 gm. per liter and in the following month, with slight oscillations, it continued to decrease from 2.5 gm. to 1 gm. It should be said that the patient had been treated, at the beginning of the nephritis, by several injections of biniodid of mercury, which had no action on the kidney. Salvarsan appeared on the contrary, to effect a decrease of the albuminuria, but it should not be forgotten that the two treatments were applied at very different periods of the affection; the mercury, at the moment of the edema and the greatest retention of chlorids; the salvarsan, when the renal permeability to chlorids had been much improved. It is probable that salvarsan does not produce the same effects at all periods of syphilitic nephritis. In any case, although the state of the kidney should be taken into account in treatment by salvarsan, incipient syphilitic nephritis being regarded as a contra-indication, this does not apply indiscriminately to all forms of renal syphilis or to all the periods of the disease.

Dr. Siredey has observed a patient affected with albuminuria, edema of the legs and purpura, in whom, six months after an indurated chancre, a sclerogummatous glossitis appeared. Mercury treatment was inefficacious and appeared to increase the albuminuria; an injection of salvarsan was employed. Seven days afterward a very marked improvement of the glossitis and a diminution of the albuminuria was observed.

Portraits at the Pasteur Institute

A portrait of Dr. Roux in his laboratory is about to be placed in the library of the Institut Pasteur, by the side of the bust of Pasteur, by Paul Dubois, and the portraits of Duclaux and Metchnikoff. Around these portraits are to be the busts of the benefactors of the institute, among whom are Alexander III, who was one of the first subscribers, Dom Pedro, second emperor of Brazil, Baron Alphonse de Rothschild, Osiris and others; then those of the former collaborators of Pasteur, Grancher, Nocard and Chamberland. The portraits of the last-named are by Dr. Paul Richer, member of the Académie de médecine and the Académie des beaux-arts.

Election of Dr. Sébileau to the Academy of Medicine

On January 24, the Académie de médecine elected a member in the section of anatomy and physiology to replace Professor Gréhant, who died last March. On the first ballot, Dr. Sébileau, *agrégé* professor of the Faculté de médecine de Paris and surgeon of the hospitals, was elected by forty-five votes against thirty-seven for Dr. Prenant, professor of histology at the Faculté de médecine de Paris.

Prizes Offered by the Belgian Academy of Medicine

The Académie royale de médecine de Belgique has offered a prize of 800 francs ($160) each, for studies on the following questions: (1) experimental research on the modifications produced in the peripheral and central parts by injections of alcohol into the nerve trunks; (2) a study of the lesions produced by hydrogen phosphid poisoning. The close of the competition is fixed for Feb. 15, 1912.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Jan 19, 1911.

Personal

Professor Nagel, director of the physiologic institute at Rostock, has just died at the age of 40. He joined the faculty of Tübingen in 1895 and after a short stay at Freiburg he was made head of a department in the physiologic institute in Berlin in 1902 whence he was called to Rostock as regular professor in 1908. The chief field of this gifted investigator was comparative physiology and the physiology of the senses. ——Professor Matthes, director of the clinic for internal medicine at the Cologne academy for practical medicine, has accepted the call to succeed Professor Brauer at Marburg.——Professor Uhlenhuth, of the imperial health office, has received a call to Strasburg as successor to Professor Forster.——Dr. Moro, privat-docent at Munich, has assumed the supervision of the Heidelberg pediatric clinic in place of Professor Feer who has gone to Zurich.

Transfer of the Prussian Medical Bureau From the Department of Education to the Department of the Interior

Medical affairs in Prussia have not, as in some other states, a special department and an independent position, but for many years have been attached to the so-called Kultusministerium, which has charge of ecclesiastical and educational matters. In consequence of the overloading of this department, the effort has repeatedly been made to separate the medical department from the Kultusministerium and transfer it to the department of the interior. In fact, the medical bureau originally belonged to the department of the interior, having been transferred to the department of education in 1849. Various reasons for and against the change have been urged, but the prevailing motive aside from the overloading of the Kultusministerium was the fact that the medical police was already a part of the department of the interior, and it was felt best that all medical affairs should be under one management. To the medical bureaus are subordinated in the first place the highest Prussian expert authority on medicine, namely the scientific deputation for medical affairs, and also the institute for infectious diseases in Berlin and a number of hygienic institutes in provincial cities, the medical investigation offices in the provinces, etc. This change cannot be considered of great importance. It will depend on the personality of the medical department and also on the head of the department of the interior whether matters of health and those affecting the medical profession will be conducted in the same way as before or not. No restriction in the requirements of the health office is to be feared, for any state which does not keep at the front in these matters would in a certain sense saw off the branch on which it is sitting.

A Salaried Municipal Medical Councilor in Berlin

The municipal health affairs of Berlin have heretofore not been conducted by a salaried member of the city government but by a physician who had merely the honorary position of a municipal councilor. The colleague in question has undeniably shown a good capacity for organization, but in consequence of an insufficient preparation has for a long time been unequal to the task of managing so great a community as our metropolis is bound to present. For many years the Berlin medical profession and the medical press, especially the *Deutsche medizinische Wochenschrift*, have demanded that the medical affairs in this city shall receive the same representation that is received by the building interests, the schools, etc., which means that they shall be cared for by a salaried officer specially trained for this important position, who shall give his attention exclusively to the care of the public health. This demand has heretofore been refused by the city government which has been under the direction of a mayor who showed little comprehension of medical needs. Some recent occurrences which indicated the insufficiency of the organization, but especially the example of our neighboring city, Charlottenburg, which has established a municipal health officer, appears to have secured the fulfilment of the wishes of the Berlin medical profession. The commission on municipal hospitals, a few days ago, made the proposal to appoint a salaried municipal health officer with the salary of a technical member of the city government, inasmuch as the duties imposed on the city in the field of public health and the tasks voluntarily assumed in this relation have lately reached such extent and importance that it seems necessary, in addition to the member who is filling the honorary office, to secure another of distinguished ability in all such questions.

Antivaccination Movement

Ever since the introduction of compulsory vaccination its opponents have each year endeavored to have the law repealed, and they seek to gain the favor of the government, the parliament and the public for their efforts by collecting and displaying the actually observed injuries due to vaccination and also by appeals to the imaginary horrors of vaccination. Repeatedly the government has seen fit to appoint commissions before which the antivaccinationists, to whom also some physicians belong, were given opportunity to make their complaints, and regularly the result of these conferences has been that the provisions for vaccination have been improved

but the provisions of the vaccination law itself have been maintained. Lately the antivaccinationists have made a new attack and have induced two delegates of the center to make a motion that another commission be appointed to discuss a modification of the vaccination law. It is further demanded that a bill should be prepared in which it shall be provided that the present physical compulsion for carrying out vaccination be removed and that further a so-called conscience clause be introduced according to which any person shall be exempt from vaccination, if he declares before the appropriate official that he cannot reconcile the vaccination of the child with his conscience. It is clear that with the adoption of such a conscience clause, compulsory vaccination would be completely abrogated and that hundreds of thousands who are opposed to vaccination, from ignorance and superstition, would exempt their children from it. The experience gained with such a conscience clause in England, where it has existed since 1907, will, it is to be hoped, induce the Reichstag to refuse the proposal of the antivaccinationists. In England marked small-pox epidemics still occasionally develop which cause numbers of deaths. The high small-pox morbidity and mortality which occur in countries in which compulsory vaccination is not required, should easily induce the government to withhold its consent to such a proposal even if it should be adopted by the Reichstag.

Imports and Exports of Drugs and Medicinal Chemicals

In 1909 the importation of manufactured remedies and other pharmaceutical products was 285 tons, valued at $290,000 (1,140,000 marks); in 1908, 326 tons at a value of $413,000 (1,653,000 marks). The exports, in 1909, were: 1,109 tons at a value of $1,994,000 (7,979,000 marks); in 1908: 936 tons at a value of $1,742,000 (6,968,000 marks). The best customers are Austria, Russia and the United States.

Chemical products for use in medicine were imported as follows: 1909: 60 tons valued at $178,000 (714,000 marks); 1908: 44 tons valued at $133,000 (532,000 marks). The exportations were: 1909: 915 tons valued at $3,223,000 (12,844,000 marks); 1908: 837 tons valued at $2,803,000 (11,212,000 marks).

Marriages

OSCAR D. WHALIN, M.D., to Mrs. Emma Maxwell, both of Chicago, recently.

CLAYTON MCPEEK, M.D., to Miss Mary Alice Biddle, both of Columbus, O., January 30.

WALTER BENJAMIN HARVEY, M.D., Pittsburg, to Miss Aurelia F. Bartlett of Lewisville, Ind., February 1.

DAVID HENRY WORTHINGTON, M.D., Aurora, Ill., to Miss Huldah Henrietta Bettcher, at Iowa City, Ia., January 17.

Deaths

Edward Gamaliel Janeway, of New York City, eminent internist and specialist on diseases of the mind, died at his summer home in Summit, N. J., February 10, aged 69. He was born near New Brunswick, N. J., and received his preliminary education at Rutgers College, from which he received the degree of B. A. in 1860, and M. A. in 1863. While still a student in the College of Physicians and Surgeons, he entered the United States Army as a medical cadet, serving in a hospital in Newark, N. J., in 1862 and 1863. In 1864 he was graduated from the College of Physicians and Surgeons. He was curator of the institution from 1868 to 1872, professor of pathology and practical anatomy from 1872 to 1879, and professor of diseases of the mind and nervous system from 1881 to 1886; professor of medicine in Bellevue Hospital Medical College from 1886 to 1892, and dean of the University and Bellevue Hospital Medical College since 1908.

He was a member of the American Medical Association, National Association for the Study and Prevention of Tuberculosis, Association of American Physicians, New York Academy of Medicine, and many other learned societies. From 1875 to 1882, he acted as commissioner of the Health Department of New York City. He was on the staff of Bellevue, Mount Sinai, Presbyterian, St. Vincent, J. Hood Wright, Woman's and French hospitals, and on the staff of the Hospital for the Ruptured and Crippled as consulting physician. He was given the degree of LL.D. by Rutgers College in 1898, by Columbia University in 1904, and by Princeton University in 1907. In 1876 Dr. Janeway served as president of the *New York Medical Journal* Association. By the death of Dr. Janeway, the medical profession loses one of its best internists and a pioneer in the practical crusade against tuberculosis.

Stanley Douglas Curran, M.D. Bellevue Hospital Medical College, 1896; instructor in physical diagnosis in the University and Bellevue Hospital Medical College; attending physician to the clinic of that institution and to the Harlem Dispensary; adjunct physician to Washington Heights Hospital; died at his home in New York City, February 4, from a gunshot wound of the head, self-inflicted, it is believed with suicidal intent, while despondent on account of ill health, aged 40.

John Calvin McClung, M.D. Western Reserve University, Cleveland, 1873; a member of the American Medical Association; formerly a member and president of the board of education, mayor, member of the council, and health officer of Leipsic, O.; local surgeon for the Cincinnati, Hamilton and Dayton; New York, Chicago, and St. Louis, and D. T. and I. railways; died at his home, February 3, from cerebral hemorrhage, following an attack of influenza, aged 68.

Aristides Monteiro, M.D. Medical College of Virginia, Richmond, 1850; Jefferson Medical College, 1854; formerly physician in charge of the male department of the Eastern State Hospital, Williamsburg, Va.; surgeon of the Tenth Virginia Cavalry and later surgeon to Col. Mosby's command in the Confederate service during the Civil War; afterward editor of a weekly newspaper in Manchester; died at his home in Richmond, January 27, aged 82.

Charles Chesterfield Nicola, M.D. University of Michigan, Ann Arbor, 1897; a member of the American Medical Association; for several years a staff physician of the Battle Creek Sanitarium; superintendent of the New England Sanitarium, Attleboro, Mass.; while en route to New York from Bermuda where he had gone on account of his health, disappeared from the steamer *Oceana*, February 7, and is supposed to have been drowned, aged 44.

Charles Edwin Wood, M.D. University of Michigan, Ann Arbor, 1907; who entered the U. S. Public Health and Marine-Hospital Service as assistant surgeon in 1908, and was assigned to duty on the U. S. R. C. *Seneca* but resigned from the service in 1910; a member of the American Medical Association; physician to the Brooklyn Rapid Transit Employees' Benefit Association; died in the Brooklyn Hospital, February 1, from Ludwig's angina, aged 29.

Giles Bertram Allen, M.D. University of Michigan, Ann Arbor, 1867; a member of the Michigan State Medical Society; a veteran of the Civil War; formerly a member of the legislature; probate judge of Eaton County for six years, and a member of the school board of Charlotte for fifteen years, and for several years a member of the local pension board; died at his home, February 5, from heart disease, aged 67.

Jacob Coble, M.D. Medical College of Indiana, Indianapolis, 1885; a member of the Indiana State Medical Association; a veteran of the Civil War; for more that forty years a practitioner of Spencer, Ind.; local surgeon for the Pennsylvania System; a member of the district board of pension examiners; died at his home, February 4, from heart disease, aged 66.

Joseph Frederick Sommerhoff, M.D. Bellevue Hospital Medical College, 1894; for ten years chairman of the examining board of the New Jersey College of Pharmacy; and at one time professor of hygiene in that institution; for many years a practitioner of Newark; died at the home of his sister in Bloomfield, N. J., January 25, from locomotor ataxia, aged 45.

J. Elmer Bailey, M.D. Kentucky University, Louisville, 1904; formerly local surgeon at Huttig, Ark., for the Eldorado and Bostrop, Farmerville and Southern, and Little Rock and Monroe railroads; a member of the Union County Board of Health; died at his home in Strong, Ark., January 12, from typhoid fever, aged 39.

Reynaldo Dorsey Mackin, M.D. Medical College of Ohio, Cincinnati, 1887; a member of the American Medical Association; a member of the legislature of West Virginia in 1907 and 1908; local surgeon at Grafton for the Baltimore and Ohio Railroad; died at his home, January 31, from nephritis, aged 46.

John Wesley Bickford, M.D. University of Buffalo, N. Y., 1881; a member of the American Medical Association; formerly coroner of Niagara County and city physician of Lockport, N. Y.; jail physician since 1908; died at his home in Lockport, January 31, from cerebral hemorrhage, aged 62.

John Grimes Keller, M.D. Medical College of Georgia, Augusta, 1884; for two years quarantine officer of Savannah; later port surgeon and county physician; in 1902 and 1904 and 1910 coroner of Chatham County; died at his home in Savannah, January 26, from cerebral hemorrhage, aged 48.

Adolph Rosenthal, M.D. University of Vienna, Austria, 1869; for eight years a surgeon in the Austrian service; of Uniontown, Pa.; from 1882 to 1902, a practitioner of Chicago; died in Mount Sinai Hospital, New York City, January 12, two weeks after an operation for pyonephrosis, aged 65.

William Litchworth Birney, M.D. Missouri Medical College, St. Louis, 1879; a member of the Missouri State Medical Association; for half a century a practitioner of medicine, and for forty years a resident of Hydesburg, near Hannibal; died at his home, January 29, from pneumonia, aged 79.

James T. Estill, M.D. Missouri Medical College, St. Louis, 1879; surgeon for the Denver and Rio Grande Railroad at Colorado Springs, Colo.; died at his home in that city, while endeavoring to light a gas range, February 2, from the accidental inhalation of gas flames, aged 61.

Selden M. Payne, M.D. Eclectic Medical Institute, Cincinnati, 1846; assistant surgeon of the Ninety-Fourth Illinois Volunteer Infantry during the Civil War; died at his home in Lexington, Ill., January 18, from injuries received by a fall down stairs two weeks before, aged 91.

Alfred Elisha Hubbard, M.D. College of Physicians and Surgeons, New York City, 1892; of Brooklyn, N. Y.; for a year surgeon on steamers plying between Hamburg and New York; died in the Norwegian Hospital, Brooklyn, Dec. 26, 1910, from meningitis, aged 41.

Charles Albert Gaudet, M.D. Tulane University, New Orleans, 1869; a member of the American Medical Association; a Confederate veteran; at one time a member of the board of health of New Orleans; died at his home, February 1, from pneumonia, aged 63.

William L. Bowman (license, Nebraska, 1891); a pioneer practitioner and clergyman of northeastern Nebraska, where he had practiced for more than forty years; for one term judge of Stanton County; died at his home in Stanton, February 6, aged 86.

Stephen S. Stout (license, years of practice, Michigan, 1900); surgeon of volunteers during the Civil War; for more than forty years a practitioner of Cheshire; a member of the state legislature in 1899; died at his home, January 31, aged 81.

Platt Ellsworth Beach, M.D. Long Island College Hospital, Brooklyn, 1877; a member of the American Medical Association; died at his home in Seville, O., January 15, from septicemia, due to a splinter wound of the left thumb, aged 55.

John N. W. Crawford, M.D. Medical College of Ohio, Cincinnati, 1880; formerly of Portsmouth, O., but for the last ten years a resident of Geneva, Switzerland; died in Cairo, Egypt, Dec. 30, 1910, from pernicious anemia, aged 53.

Joseph Milligan Wallace, M.D. Columbus (O.) Medical College, 1879; a member of the Illinois State Medical Society, and one of the oldest practitioners of Mercer County; died at his home in Aledo, February 1, from pneumonia, aged 56.

Alfred Charles Denham, M.D. Miami Medical College, Cincinnati, 1867; for many years a practitioner of Somerset, Ky., and Cincinnati; died at the home of his daughter in the latter city, January 11, from cerebral hemorrhage, aged 81.

John M. Bradford, M.D. University of Pennsylvania, Philadelphia, 1884; at one time a member of the staff of the Episcopal Hospital, Philadelphia; died in his office in Kensington, Philadelphia, February 2, from nephritis, aged 52.

William R. Nugent, M.D. College of Physicians and Surgeons, Keokuk, Ia., 1863; formerly chief surgeon of the Iowa Central Railroad at Oskaloosa, Ia.; died at his home in Chicago, February 3, from chronic nephritis, aged 78.

Carl William Rummel, M.D. Rush Medical College, 1899; a member of the Iowa State Medical Society; health officer and city physician of Webster City, Ia.; died at his home, January 31, from pneumonia, aged 37.

Charles W. Vroom, M.D. State University of Iowa College of Homeopathic Medicine, Iowa City, 1887; a member of the Iowa State Medical Society; died at his home in Whitten, Ia., January 9, from myocarditis, aged 61.

Fenwick Robertson, M.D. University of Maryland, 1854; assistant surgeon in the Confederate service during the Civil War; died at the Maryland Line Confederate Soldier's Home, Pikesville, Md., January 31, aged 81.

William Ely, M.D. Western Reserve University, Cleveland, 1881; a member of the Medical Society of the State of Pennsylvania; died at his home in Beaver Center, January 12, from cerebral hemorrhage, aged 62.

Thomas Zadoc Offutt, M.D. University of Pennsylvania, Philadelphia, 1856; surgeon in the Confederate service during the Civil War; died at his home in Granite, Md., January 30, from senile debility, aged 81.

Joseph L. Cook, M.D. Jefferson Medical College, 1858; formerly president of the Westmoreland County (Pa.) Medical Society, and coroner; died at his home in New Alexandria, January 19, aged 79.

Charles L. Morehouse, M.D. Eclectic Medical College of the City of New York, 1881; for sixty-four years a practitioner; died at his home in New York City, January 23, from pneumonia, aged 88.

Samuel Micajah Johnson, M.D. College of Physicians and Surgeons, Keokuk, Ia., 1873; a veteran of the Civil War; died at his home in Carson, Ia., January 24, from cirrhosis of the liver, aged 70.

Joseph Gardner Moore, M.D. Baltimore Medical College, 1906; a member of the American Medical Association; died at his home in Philadelphia, Dec. 16, 1910, from typhoid fever, aged 33.

Clement Ritter, M.D. Jefferson Medical College, 1890; of Selma; a member of the Medical Association of the State of Alabama; died at an infirmary in Birmingham, January 11, aged 47.

George L. Hughes, M.D. Hahnemann Medical College, Chicago, 1891; died at his home in Chicago, February 9, after an operation for bladder disease, from heart disease, aged 72.

John P. Cook (license, years of practice, Texas, 1907); a Confederate veteran; for thirty-five years a practitioner; died at his home in Mexia, Tex., Oct. 1, 1910, from cholelithiasis, aged 66.

Edward Paulding, M.D. Bellevue Hospital Medical College, 1890; a physician of New York City; died at his home in Flushing, L. I., January 10, from cerebral hemorrhage, aged 48.

Henry J. Denham (license, Rhode Island, 1895); for more than a quarter of a century a practitioner of Providence; died at his office in that city, January 20, from heart disease.

John B. Baskerville, M.D. University of Pennsylvania, Philadelphia, 1869; of Dublin, Va.; a Confederate veteran; died at the home of his daughter in Dublin, January 17, aged 64.

Robert Swayne Prentiss, M.D. College of Physicians and Surgeons, New York City, 1870; died at his home in Long Island City, N. Y., January 28, from angina pectoris, aged 71.

Lemuel Leake Silverthorn (license, years of practice, Illinois, 1877); for fifty-four years a practitioner of Illinois; died at his home in Charleston, January 21, aged 79.

Samuel T. F. Kirkpatrick, M.D. Reform Medical College of Georgia, Macon, 1861; formerly of Franklin, Tenn.; died at his home in Nashville, January 26, aged 72.

Thomas Benjamin Haynes, M.D. Kentucky School of Medicine, Louisville, 1890; died at his home in Beaumont, Tex., January 27, from dysentery, aged 44.

Thomas Floyd Norvell (license, Illinois, 1878); for thirty-five years a practitioner of Illinois; died at his home in Peoria, January 24, from nephritis, aged 58.

William M. Rich (license, Kansas, 1901); for twenty-six years an eclectic practitioner of Clements; died at his home, January 27, from influenza, aged 81.

Alfred Stevens, M.D. College of Physicians and Surgeons, Keokuk, Ia., 1874; died at his home in Iowa City, January 27, from cerebral hemorrhage, aged 71.

Isaac D. Johnson, M.D. Homeopathic Medical College of Pennsylvania, Philadelphia, 1852; died at his home in Kennett Square, Pa., January 30, aged 83.

James Polk Marshall (license, Arkansas, 1903); an eclectic practitioner of Caulksville, Ark.; died at his home, January 29, from heart disease, aged 65.

John A. Fitz-Gerald (license, Illinois, 1897); was found dead in his office in Chicago Heights, January 23, from valvular heart disease, aged 45.

Otto Albert Pfefferkorn, M.D. Boston University, 1910; died at his home in East Weymouth, Mass., January 28, from pneumonia, aged 24.

James R. Rowland, M.D. Texas Medical College, Galveston, 1875; died at his home in Mineola, Tex., Oct. 4, 1910, from cancer, aged 71.

XUM

"The Propaganda for Reform"

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION.

THE GLUTEN AND CARBOHYDRATE CONTENTS OF GLUTEN BREAD

At the Second International Congress for the Repression of Frauds, held in Paris, the proceedings of which are published by the Geneva White Cross Society, the question of the gluten and carbohydrate content of gluten bread was discussed. An abstract of this part of the society's proceedings, is given below, and the matter is further referred to editorially in this issue:

BREAD AND BAKERS' PRODUCTS

The following definition was proposed: "Gluten bread is bread made from a flour containing at least 60 per cent. gluten, this flour being obtained either by eliminating a part of the starch of the flour or by mixing a gluten flour with it."

Dr. Chevalier: The name gluten bread ought to be applied only to bread containing a maximum of 25 per cent. carbohydrates, starch, sugar or derivatives and 75 per cent. nitrogenous substances. According to Hewald, in fact, gluten bread ought to contain about 76 per cent of nitrogenous substances and 10 to 30 per cent. of carbohydrates. This means that in place of fixing a minimum of gluten or nitrogenous substances, one fixes a maximum of carbohydrates which is really more logical, for what the diabetic seeks is a food which is not a carbohydrate.

Pharmacien Principal Pairault: No doubt, but the question is very complicated.

The President: The definition of 60 per cent. of gluten is really the definition of the inventor of gluten bread, Bouchardt, who remarks that in his time a gluten bread was manufactured to which "legumine" was added, and which was sold under the name of "gluten and legumine bread."

M. Arpin: The definition is completed as follows: "In the above-mentioned breads the nitrogenous substances may be furnished by gluten, aleurone, casein, legumine, almonds, soya flour with oils removed, etc., but the presence or the association of these various substances ought to be specified." Consequently this would be an optional operation. That is another question which will come afterward. It is necessary first to complete the definition.

Dr. Chevalier: This quantity of gluten is not sufficient to justify the name of "gluten bread." Here are analyses published by M. Balland. He analyzed three gluten breads; they have the following compositions: The first two are very similar. They contain 36 per cent. nitrogenous substances; 1.25 and 1.76 per cent. of fat and 51.87 per cent. of starch for the first, and 52.92 per cent for the second. These are the commercial breads which exist at present. The third has the following composition:

Moisture	10.00 per cent.
Albuminoid nitrogenous substances	73.02 per cent.
Fat	3.45 per cent.
Starch	12.50 per cent.

It is evident that the first two breads cannot be considered gluten bread. There is nothing gained over a definition which is altogether therapeutic, and this is the point of view which I take. To give a patient gluten bread without any addition is not possible, but if you make bread with gluten and wheat flour you obtain too large a proportion of carbohydrates and therefore a bad bread. It is necessary to add either legumine or other nitrogenous substances containing a sufficiently large proportion of nitrogen to permit of the making of bread. From the therapeutic point of view, you ought to base the definition on the quantity of carbohydrates and not on the quantity of gluten.

Pharmacien Principal Pairault: Is it possible to manufacture bread with pure gluten? No! Then it must be admitted that there is a certain proportion of starch. What minimum proportion do you think possible from the practical point of view, from the bakers' point of view?

M. Arpin: Bread is made with pure gluten; I have seen it. But one needs to know if this bread can be easily masticated and digested by the diabetic.

Dr. Chevalier: From the practical point of view, I demand a maximum of 25 per cent of carbohydrates in gluten bread.

The President: This is what Bouchardt says in his book: "In the manufacture of gluten bread, the most conscientious manufacturers put in 25 per cent. of wheat flour and 75 per cent. of moist gluten to obtain a product which is readily acceptable.

M. Heudebert (manufacturer of health foods): I, myself, manufacture a gluten bread for which a patent has been applied and for which I have obtained a German patent. You know, of course, that the German patent guarantees the character of the invention. I have succeeded in manufacturing a gluten bread without the addition of wheat flour but with the addition of a certain proportion of alimentary casein. This has permitted me to make a bread which contains only a very little starch (10 to 20 per cent.), and which is very agreeable to the taste.

Pharmacien Principal Pairault: Such a bread can not be called "gluten" because it contains something else.

M. Heudebert: When Professor Bouchardt wrote what the President read to us just now, the progress in this industry which has since been realized had not been made.

Dr. Chevalier: From the practical point of view, I demand that the amount of gluten be raised from 60 to 75 per cent. There are breads which contain 12.5 per cent. of starch, as I have shown you just now in the analysis which I read.

President: You know, gentlemen, that "Père Bouchardt," as he was called, was much interested in the question. He was a practical man. It seems to me that we might pay respect to his opinion when he tells us that gluten bread ought to contain 25 per cent. of wheat and 75 per cent. of gluten.

Dr. Chevalier: There has been progress since Bouchardt and we have not the right to make a work of Bouchardt which dates from 1880, the basis of a definition in 1909.

President: I merely gave the reference as information.

Pharmacien Principal Pairault: It is necessary to know if it may be admitted that gluten bread contains anything else but gluten and starch.

President: No, it ought to contain only gluten.

Dr. Chevalier: I propose that the maximum of 25 per cent. of carbohydrates and 75 per cent of gluten be accepted. You make patients pay very dear for gluten bread; they ought to get something for their money. In fancy breads, oatmeal breads, or breads made in the Vienna style, you have 62 per cent. of carbohydrates. You are going to have 40 per cent. in gluten bread. I think that the difference is not enough; 75 per cent. of gluten is necessary.

M. Arpin: Subtracting carbohydrates.

Dr. Chevalier: Yes, subtracting carbohydrates. I will change the question if you wish; I say that 60 per cent. of gluten is not enough to justify the name of gluten bread.

President: For the percentage of gluten ought we not to appeal to the Section on Hygiene?

Dr. Chevalier: I see no objection.

President: We are business men. We ought not to adopt rules which perhaps would not be applicable to all people in commerce.

M. Heudebert: I call your attention to what will happen from the commercial point of view. *The public is ignorant of all these questions.* [Italics ours.—Ed.] A bread is called antidiabetic; if it is sold at 50 centimes (10 cents) it will be bought by preference because it is cheap, without regard to the fact whether it contains starch or not. The manufacturer who succeeds in manufacturing a bread which answers the therapeutic requirements of Bouchardt will not be able to sell it cheap, because it will be composed of expensive material. He will then be at a disadvantage, whereas in all justice he will have furnished the solution to the question. In my opinion, one might enlarge the scope and give all possible liberty on condition that the buyer shall know that in buying a bread, whether cheap or dear, he has a product which does or does not answer to what the doctor has prescribed for him, and that he shall get his money's worth. There are antidiabetic breads which contain sugar.

President: We are discussing gluten bread, not antidiabetic bread. You will consider that in the Section on Hygiene. I put the question: Do you think that we, who are only merchants, can fix the minimum of gluten that ought to be found in gluten bread? Is not 60 per cent. a little large, and if we say 75 per cent., shall we not err in the other direction? It is not only specialists who make gluten bread; all bakers make it. Are we not going to expose all bakers to the danger of being prosecuted to-morrow if we demand 75 per cent. of gluten, because they will not all be capable of making a bread with that proportion?

M. Heudebert: Gluten bread is not bought as a luxury but as a necessity. That is the point of view to take.

President: That's therapeutics.

M. Bruzeau: From the point of view of defining frauds it is necessary to fix a minimum. The rest is therapeutics.

President: That's a sensible opinion from an independent person.

A Member: It seems to me that the question of gluten is not so important as that of carbohydrates. Why not indicate, as was proposed just now, a maximum of starch?

M. Arpin: I believe that the interests of the bakers would be better safeguarded by fixing a maximum of starch, because they would not easily succeed in making a bread which contains 75 per cent. of gluten.

President: The remark has been made to me that if you fix a maximum of starch it will be necessary to incorporate another ingredient.

M. Arpin: The minimum of gluten might be fixed likewise.

President: We should be doing bad services by trying to obtain the quintessence. Under pretext of repression of fraud, we ought not to declare conscientious people adulterators.

Dr. Chevalier: I do not speak as a commercial man. I am a physician. I say "You wish to make a definition of gluten bread, taking as a basis something which does not exist for diabetics. What you ought to give as a definition for diabetics is the maximum quantity of carbohydrates which ought to be contained in the bread. Patients do not need gluten, they need bread which does not contain carbohydrates."

Pharmacien Principal Pairault: Carbohydrates comprise starch, sugar, etc.

Dr. Chevalier: Starch or sugar or dextrin all become sugar in the stomach.

A Member: Should this question not be reserved for the Section on Hygiene?

M. Arpin: Almost all the bakers sell gluten bread. We need to discuss and to define it.

President: The question has been made the subject of study by the originators of the Congress. It has not been made a subject of special reports, but I know that M. Roux has a great deal of information and that M. Roques, Rapporteur général, has probably not fixed the figure of 60 per cent. at random. We should do well to be tolerant and to adopt 60 per cent.

Dr. Chevalier: I think that 60 per cent. is too little, for the rest is composed of carbohydrates.

Pharmacien Principal Pairault: No, for there is water also.

Dr. Chevalier: Not at all, since we are figuring only the dry material. There is no water then.

President: The report says simply 60 per cent. of gluten.

Dr. Chevalier: There are gluten breads which have 5 to 10 per cent. of water, and others which have as much as 38 per cent.

Pharmacien Principal Pairault: It is understood that the gluten is all dry gluten but the report does not say dry gluten bread. One must take the bread as it is, so much gluten, so much starch, so much water. Consequently the 40 per cent. does not consist exclusively of carbohydrates. There is also 7 to 8 per cent. of water.

Dr. Chevalier: That depends on the manufacturer. Between 38 and 7 per cent. That is just why you cannot estimate on the basis of gluten bread; you must estimate it dry.

Pharmacien Principal Pairault: It is almost a hardtack.

Dr. Chevalier: There are gluten breads that contain more moisture than hardtack. That depends on the manufacturer.

Pharmacien Principal Pairault: A bread which contains 60 per cent. of gluten cannot contain 40 per cent. of carbohydrates.

Dr. Chevalier: This proportion of 60 per cent. can be understood only as calculated on the dry product. That is why it is necessary to define exactly and not say "60 per cent. of gluten" without knowing whether it is dry gluten and dry bread.

Pharmacien Principal Pairault: Let us say simply "containing a maximum of 20 to 25 per cent. of starch cereals without any other addition."

Dr. Chevalier: That is just what I demand.

A Member: We shall be sending the question to the pharmaceutic section next.

President: It is really more a question of pharmacy than of bakery.

Another definition is proposed: "Only breads containing 25 per cent. of wheat starch calculated on the basis of dry material ought to be called gluten bread."

A Member: But that is not gluten bread.

Pharmacien Principal Pairault: It is an antidiabetic bread, not a gluten bread.

M. Arpin: Yes, it is, the rest being gluten.

Pharmacien Principal Pairault: We ought to add "and not less than 60 per cent. of gluten."

M. Heudebert: That would not injure any baker at all.

President: I believe that this solution is satisfactory to everybody.

M. Arpin: It seems to me that all interests are safeguarded, even those of patients.

President: I am going to put to the vote the following definition of gluten bread:

"Only breads containing a maximum of 25 per cent. of wheat starch and a minimum of 60 per cent. of gluten, calculated on the basis of the dry material, should be called gluten bread."

This definition put to the vote was adopted.

Association News

THE LOS ANGELES SESSION

A Preliminary Statement Concerning Hotels and Hotel Rates

The reports which are coming in indicate that attendance at the next session of the American Medical Association will be large, and that geographical distance will not materially interfere with the attendance. The hotel facilities are ample, and the halls and hotel head-quarters are compactly grouped in the down-town district; and unless the weather records of years are changed, the weather during that week should be exceptionally good. The summer climate of Los Angeles is in every way as pleasant as the winter season.

The General Head-Quarters hotel will be the Hotel Alexandria.

The General Meeting of the Association will be at the Baptist Auditorium, at Fifth and Olive Streets.

Accompanying is a list of hotels and the rates which can be obtained at the time of the session, as reported to the Los Angeles Convention League. There are 400 family and tourist hotels and apartments available which are not included in the list. Those wishing to reserve rooms should write direct to the hotels, or to the Committee on Arrangements.

RATES AT LOS ANGELES HOTELS

NAME OF HOTEL, Plan,* and No. of Rooms	ONE PERSON		TWO PERSONS	
	Without Bath	With Bath	Without Bath	With Bath
Alvarado, A., 100.....	$2.50 up	$4.50 up	.....	$5.00 to $7.00
Alexandria, E., 700...	2.00 to 3.00	3.00 to 5.00	$3.00 to $4.00	4.00 to 10.00
Angelus, E., 300.....	1.50 to 3.00	2.50 to 5.00	2.50 to 4.00	4.00 to 10.00
Astoria, E., 200.....	1.00	1.50	2.00	2.50
Broadway, E., 200.....	1.00 to 2.00	1.50 to 2.50	1.50 to 3.00	2.50 to 4.00
Fremont, A., 100.....	2.50 up	5.00 up	3.50 up	6.00 up
Hampden Arms, E., 60	1.00	1.50 to 2.00	1.50	2.00 to 2.50
Hayward, E., 300.....	1.50 up	2.00 up	2.00 up	3.00 up
Hollenbeck, E., 500...	1.00 up	1.50 up	2.00 up	3.00 up
Hollywood, A., 200....	2.00 up	4.00 up	2.50 up	6.00 up
Ingraham, A., 100.....	2.50 up	4.00 up	3.50 up	5.00 up
King Edward, E., 150.	1.00 up	1.50 up	1.50 to 3.00	2.00 to 3.00
Lankershim, E., 300..	1.50 up	2.00 up	2.50 up	3.00 up
Leighton, A., 125.....	3.00 up	3.50 up	5.00 up	6.00 to 10.00
Melrose, A., 200.....	2.50	4.00	3.50	5.00
Munn, E., 100.....	.75 to 1.00	1.00 to 1.50	1.25	1.50 to 2.00
Nadeau, E., 150.....	1.00 up	1.50 up	1.50 up	2.50 up
Natick, E., 160.....	.75 up	1.00 up	2.00 up	3.00 up
Occidental, E., 200....	1.00 to 2.00	1.50 to 2.50	1.50 to 3.00	2.50 to 4.00
Rosslyn, E., 285.....	.75 up	1.00 up	1.50 up	2.50 to 4.00
Snow, E., 100.....	1.00 to 2.00	1.50 to 2.50	1.50 to 3.00	2.50 to 3.50
Trenton, E., 165.....	1.50 up	2.00 up	2.00 up	2.50 up
U. S., E., 130.....	.50 to 1.00	1.00 to 1.50	1.50 up	2.00 up
Van Nuys, E., 160.....	1.50 up	2.50 up	2.50 up	4.00 up
Victoria, E., 100.....	1.00 up	1.50 up	2.00 up	2.50 up
Watson, E., 100.....	1.00 up	1.50 up	1.50 up	2.00 up
Westminster, E., 250..	1.00 up	2.00 up	1.50 up	3.00 up
Woodward, A., 125....	2.00 up	3.50 up	2.50 up	4.00 up
Westmore, A., 100.....	2.00 up	2.50 up	4.00 up	5.00 up
Yorkshire, E., 100.....	1.00	1.50 up	1.50 up	2.00 up

* A, American plan; E, European plan.

As regards entertainment: the nearness to the ocean beaches and to the foot hills, with the trip to Catalina Island, and the possibility of out-of-door entertainments, will make possible a variety of features not easily had in other sections of the country.

We wish that those who are thinking of attending the session would drop a postal card to the Committee on Arrangements, 240 Bradbury Building, Los Angeles, Cal., stating the

number in the party. The committee will appreciate this courtesy, as the more definite its knowledge concerning the number of visitors, the more thorough can be its preparations for their entertainment.

The undersigned will be glad to send further information on receipt of request.

H. BERT ELLIS, Chairman,
GEORGE H. KRESS, Secretary.

Rates to Los Angeles

The Chairman of the Committee on Transportation wishes to state that he has received a great many letters from members inquiring about rates, routes, etc., to the Los Angeles session. He has been unable to answer them as yet for the reason that the railroads have not been able to agree on the rates. Notice has just been received that the western roads have made a rate of $62.50, round trip from Chicago to Los Angeles by any direct route, or by way of San Francisco. From St. Louis, Memphis and New Orleans the rate is $57.50; Missouri River Gateways (Omaha to Kansas City inclusive), $50.00; St. Paul and Minneapolis, $63.50. Dates of sale are June 5 and 6 and June 10 to 22, both inclusive. The final return limit is September 15. Additional rates will be published as soon as they have been announced by the railroads. Details of routes and the arbitrary amount to be added for the northern roads will also have to be announced later.

M. L. HARRIS, Chairman, Chicago,
Committee on Transportation and Place of Session.

Correspondence

Two Appendices in One Person

To the Editor:—In THE JOURNAL, January 21, Dr. W. G. Young writes of a case in which he found two appendices in one individual, each appendix being well-defined and well-developed.

Some years ago a patient was brought to me for operation for adhesions following an appendicitis operation. On opening the abdomen, I found an appendix about three inches long, containing two hard concretions, much to the surprise of another physician present, who stated that the year before he had stood by while the same patient was operated on in an acute attack, and had seen an appendix with three concretions removed. My explanation at the time was that probably the patient possessed an appendix six inches long originally, and the first operator had removed three inches with three concretions, the rest having escaped observation in the midst of acute inflammatory products. I do not know whether this was really the explanation, or whether the patient had two appendices, as the family physician still believes.

ROBERT T. MORRIS, New York.

A Theory of the Cause of Cancer

To the Editor:—In the quest for the cause of cancer, theory and speculation have run wild, but up to the present time we seem to be as far away from the goal as we were when the pathologist first began to unravel the almost hopeless tangle. Theories have been unnumbered, and among the more recent are those of the sturgeon's egg and the trout. Investigation has been directed to cancer in other kinds of fish. Maps have been prepared showing the relation of the so-called cancer areas to the natural distribution of trout.

Cancer does not seem to limit itself to those who dine on *hors d'oeuvres* and fish. It has occurred to me that possibly the commonest form of living animal cell which is ingested by human beings, and which might be the cause of new growth, is that of the fecundated hen's egg. The latter is practically unlimited in distribution, and, indeed, where it is not obtained, other varieties of immature ovular life are used in its stead; for instance, the egg of the common duck, the seagull, the ostrich and of many others, even of reptiles.

To be sure, eggs are eaten, not always, but frequently, in the raw state as in egg-nog, beaten white of egg, and soft-boiled. In a lightly cooked egg, the ovum seems to resist coagulation more than the remainder of the egg.

We are told that all new growths are derived from one of the primitive layers, and in the fecundated egg we have all of these requirements—the endoderm, the mesoderm and the ectoderm. This living cell then, introduced into the human body and becoming attached to some abnormal part of the digestive apparatus, gastric, duodenal or intestinal ulcer for instance, begins its growth, and then by metastasis, its progress may become unlimited. In recent months laboratory work has been done in the artificial propagation of various cellular structures, notably that of the chicken embryo.

In THE JOURNAL (January 21, p. 198), Peyton Rous reports characteristic cancerous growths following the inoculation of small amounts of a watery filtrate of a chicken sarcoma, and also following inoculation of fluid supernatant after centrifugalization of a tumor emulsion.

If then, new growth may be transmitted, not necessarily by the intact living cell, the possible chance of transmission of new growth through the medium of its by-products becomes apparent.

MALCOLM SEYMOUR, M.D., Boston.

[COMMENT.—The theory that the germinal cells included in the hen's egg are the cause of cancer was proposed by G. Kelling in the *München. med. Wchnschr.*, 1904, li, No. 24. His communication was commented on editorially in THE JOURNAL, July 23, 1904, p. 269, and a second communication was made by him in the *München. med. Wchnschr.*, li, No. 43, 1904; abstr. in THE JOURNAL, Dec. 3, 1904, p. 1733. Kelling claimed to have produced malignant neoplasms by the inoculation of dogs with hens' eggs and also found that in human carcinoma of the stomach, a precipitin reaction for hen's-egg albumin could be obtained. This theory does not appear to have received any notice since that time. We have no known example of the successful transplantation or grafting of the cells of one animal species into the tissues or bodies of some other species; consequently it is rather far-fetched to assume that the living cells in the hen's egg might grow in the animal body.—EDITOR.]

Preservation of Rubber Bulbs

To the Editor:—Apropos of the note by Dr. Goodman, referring to the short life of rubber bulbs, in THE JOURNAL, Jan. 14, 1911, p. 113, and the letter on the same subject by Dr. Albert Robin, in THE JOURNAL, Feb. 4, 1911, p. 367, it occurs to me that it might be of general interest to note that the perishability of rubber bulbs, such as are used with sphygmomanometers, has been known for many years. Hill and Barnard, as early as 1897, employed a metal pump similar to that used for inflating bicycle tires on a sphygmomanometer devised by them, and reported it in the *Brit. Med. Jour.*, 1897, ii, 904.

Having encountered the same difficulty in my work with sphygmomanometers, I have had made pumps of two varieties which may now be obtained from instrument dealers at small cost. These pumps are small and are each fitted with a valve to prevent escape of pressure. The later model, which is smaller than the first, is also provided with a needle valve which permits the gradual release of pressure in the system. The first of these pumps has been in use for nearly two years, and from the number now extant, seem to be becoming increasingly popular.

FRANCIS ASHLEY FAUGHT, M.D., Philadelphia.

Differentiation of Chronic Nephritis and Neurasthenia.—Chronic nephritis with threatening uremia may sometimes present a group of symptoms in a neuropathic individual which might be mistaken for neurasthenia, e. g., headache, characterized by tightness and feeling of pressure, especially in the morning, giddiness, weariness and lassitude with inaptitude for mental or bodily work, diurnal somnolence, etc. An examination of the heart, the urine, the pulse and the retina will enable a diagnosis to be made.—F. W. Mott, in the *Practitioner*.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

DESCRIPTION OF SEPTIC TANK—HOW SOON AFTER CHILDBIRTH MAY CONCEPTION OCCUR?

To the Editor:—Kindly answer the following questions: 1. What is a septic tank? 2. How soon after the birth of a child may another conception take place? L., Ohio.

ANSWER.—1. A septic tank is a tank into which sewage is allowed to flow, there to remain for a certain time in order that solid matters may settle out and a certain amount of putrefaction occur from the action of the anarobic bacteria present in the sewage. Most of the benefit comes from the deposition of solid matter, which might otherwise clog filter beds. This solid matter is removed at intervals of some months. For fuller information see THE JOURNAL, Nov. 5, 1910, p. 1650, and Dec. 10, 1910, p. 2067.

2. Kroenig, in the *Zentralblatt für Gynäkologie*, 1893, page 445, describes a case of pregnancy in a secondi para who gave birth March 10, 1893, to her second child and July 4, 1892, to her first child. The first child was nursed ten days. A single coitus occurred four days after the birth of the first child, that is, on July 8. There was no further intercourse for three months. The second child, which was born 243 days after the fruitful coitus, was 52 cm. long and weighed nearly 8 pounds. This is the earliest recorded case of conception postpartum. It raises several interesting questions relating to the activities of the ovaries during pregnancy, the viability of spermatozoa in the lochia, the possibility of the nesting of the egg in the recently emptied uterus and the duration of pregnancy.

Weinberg, in the *Zeitschrift für Geburtshilfe und Gynäkologie*, vol. l, page 7, in a paper on "The Effect of Nursing on Menstruation and Conception," has collected statistics which show that about 20 per cent. of nursing women and 80 per cent. of those who do not nurse menstruate within six weeks of labor. Of puerperæ who do not menstruate about one in one hundred become pregnant within six months and about six in ten of the puerperæ who menstruate become pregnant within the same period.

SILVER NITRATE AND OTHER COMMON GERMICIDES IN GONORRHEA

To the Editor:—Since reading the article on "Common Germicides" by Post and Nicoll, in THE JOURNAL, Nov. 5, 1910, I have often wondered why some of the more efficient germicides are not used clinically in the treatment of gonorrhea. I have not been able to find the information I want on the subject, nor have I been able to learn anything from a number of physicians with whom I have talked about the matter. Why can we not with advantage use tincture of green soap, alcohol or Senn's solution as an injection in gonorrhea? If we can, why has it not been done, and what is the proper way to use these agents? Why are argyrol and protargol used so extensively if silver nitrate is superior?

E. E. EVANS, M.D., Gary, Ind.

ANSWER.—Tincture of green soap and alcohol are both irritating to denuded epithelial surfaces; they cause hyperemia and increased weeping from the surfaces, and thus interfere with the formation of horny epithelium and healing. For these reasons, if for no other, they would hardly seem to be useful antiseptics in acute urethritis. The same reasons in less degree apply to Senn's iodin solution. As regards argyrol and protargol and silver nitrate: In the first place, of course, silver nitrate is fatherless and there is no one to tell every willing listener over and over again its wonderful qualities; in the second place, silver nitrate shares with alcohol the quality of being too irritating in efficient strength to be a satisfactory antiseptic for use in acute gonorrhea. In chronic gonorrhea, when properly used, it is unequaled by any of the newer silver preparations.

FINSEN LIGHT AND LUPUS VULGARIS

To the Editor:—Is the Finsen light much used in this country? What is the percentage of cures of lupus vulgaris by this method of treatment? Is lupus vulgaris more prevalent on the Continent of Europe and the British Isles than in the United States?

JOHN B. DONALDSON, Lorain, Ohio.

ANSWER.—The Finsen light is now used very little in the United States; here and in Europe it has been largely replaced among dermatologists by the *x*-ray. The results in the Finsen Light Institute in Copenhagen for 456 patients treated up to Dec. 31, 1900, were as follows: In slight cases 83 per cent. of the patients were practically cured; in extensive cases 52 per cent. were practically cured; 130 patients were known to be well for five years. Lupus vulgaris is much more prevalent in continental Europe and in the British Isles than in the United States.

SURGERY ONE HUNDRED YEARS AGO

To the Editor:—I am informed that a history of surgery was published in THE JOURNAL some years ago and that it was afterward published in book form. If you have the book will you kindly send me a copy? If not, please inform me where I can obtain it. S. A. CLARK, South Bend, Ind.

ANSWER.—Perhaps the article you want is by Dr. George Fischer on "Surgery One Hundred Years Ago, a Historical Study," translated by Dr. Carl H. von Klein, Chicago. This work appeared in THE JOURNAL in 1897 in many issues, namely, from February 13 to August 14; also in the first part of 1898. It has not been published in any other form.

BLEPHAROSPASM A NASAL REFLEX

To the Editor:—Replying to the request of Dr. R. S. Lamb for information regarding "blepharospasm," I would refer him to the recent article on "Reflexes and Reflex Neuroses from the Upper Air Tract," by Dr. Bryant in the *Boston Medical and Surgical Journal*, Feb. 2, 1911.

Blepharospasm is usually a nasal reflex and the area involved is the tubercle of the septum and middle turbinal. In fact, this "genital area" of the nose is hyperesthetic and changes of blood-pressure induce the irritation which shows itself in the muscular movements. I have seen chronic symptoms, and, indeed, severe chorea, yield immediately to the removal of adenoids or to direct treatment of these areas within the nose; by direct I mean local applications under illumination. EDMUND D. SPEAR, M.D., Boston.

The Public Service

Medical Department, U. S. Army

Changes for the week ended Feb. 11, 1911.

Gunckel, George I., D.S., sick leave of absence extended fourteen days.

Stone, Frank P., D.S., reported for duty at Presidio of Monterey, Cal.

Weed, Frank W., captain, reported for temporary duty at Madison Barracks; left Fort Totten, N. Y.

Trinder, John H., M.R.C., reported for temporary duty at Fort Totten, N. Y.

Lambie, John S., Jr.; Worthington, Joseph A.; Tasker, Arthur N.; Snyder, Howard M., and McKinney, Garfield L., first lieuts., ordered to report to Lieut.-Col. James D. Glennan, Medical Corps, president of examining board, Army General Hospital, San Francisco, for examination for promotion.

Foster, George B., Jr., lieut., relieved from duty at the Army Medical School, Washington, D. C., and ordered to Fort Leavenworth, Kan., for duty.

Bourke, James, captain, relieved from duty at Fort Leavenworth, Kan., and ordered to Fort Crockett, Texas, in time to arrive there about March 10, 1911.

Cowles, Calvin D., Jr., and Phillips, Hiram A., first lieuts., ordered to report to Lieut.-Col. Henry P. Birmingham, Medical Corps, president of the examining board, at the Army Medical Museum Building, Washington, D. C., for examination for promotion.

Barber, John R.; Ashford, Mahlon; Huber, Edward G., and Hunt, William L., first lieuts., ordered to report to Major William E. Purviance, Medical Corps, president of the examining board, at Manila, P. I., for examination for promotion.

Schmitter, Ferdinand, captain, ordered to repair to this city for special duty in the laboratory at the Army Medical School for a period not to exceed seven days.

Monerief, William H., captain, on arrival at San Francisco will proceed to Fort Riley, Kan., for duty.

Le Hardy, Julius C., M.R.C., directed to proceed from Manila, P. I., to San Francisco, March 15, instead of Feb. 15, 1911.

Bierbower, H. C., M.R.C., left Fort Robinson, Neb., en route to Fort Meade, S. Dak., for duty in field with 4th Cavalry.

Johnson, Howard H., captain, left Fort McDowell, Cal., on leave of absence to include Feb. 15, 1911.

Aydelotte, John T., lieut., left Fort Sam Houston, Texas, with troop F and H, 3d Cavalry, for duty in field at Marfa, Texas.

Fox, James S., lieut., ordered to duty with troop L, 3d Cavalry, in field at Samfordyce, Texas.

Austin, Thomas C.; Napier, Edward L., and Welles, Edward M., Jr., first lieuts., left Army General Hospital, San Francisco, for service in the field on Mexican border.

Kerr, James D., M.R.C., resignation accepted by the President, to take effect Feb. 7, 1911.

Johnson, Howard H., captain, leave of absence extended to and including Feb. 15, 1911.

Williams, Harry B., M.R.C., granted twenty-nine days' leave of absence.

Ireland, M. W., ordered to proceed to Chicago to attend the seventh annual conference on education and legislation of the American Medical Association to be held in that city March 1-3, 1911.

Pulver, Arthur L., M.R.C., granted leave of absence for one month and ten days.

Duncan, William A., captain, relieved from duty at Vancouver Barracks, Wash., and will repair to this city and report for duty at the Field Medical Supply Depot.

Medical Corps, U. S. Navy

Changes during the week ended Feb. 11, 1911.

George C. M., asst.-surgeon, ordered to duty at the naval hospital, Navy Yard, New York.

Sheldon, L., Jr., asst.-surgeon, ordered to duty at the naval hospital, Norfolk, Va.

Randall, J. A., P. A. surgeon, ordered to the naval station, New Orleans.

Ely, C. F., P. A. surgeon, ordered to temporary duty at the naval hospital, Naval Home, Philadelphia.
Brown, H. L., P. A. surgeon, ordered to the navy recruiting station, Los Angeles.
Munger, C. B., P. A. surgeon, detached from the navy recruiting station, Los Angeles, and ordered to the *Yorktown*.
Lumsden, G. P., medical inspector, transferred to the retired list from Feb. 7, 1911.
Haynes, J. P., P. A. surgeon, detached from the naval station, New Orleans, and ordered to the Asiatic station.

U. S. Public Health and Marine-Hospital Service

Changes for the seven days ended Feb. 8, 1911.

Anderson, J. F., P. A. surgeon, directed to proceed to lower Potomac river on special temporary duty.
Bahrenburg, L. P. H., P. A. surgeon, granted one day's leave of absence, Jan. 8, 1911, under paragraph 191, Service Regulations. Granted thirteen days' leave of absence from Jan. 21, 1911, on account of sickness.
Blount, B. B., A. A. surgeon, granted thirty days' leave of absence from Feb. 1, 1911.
Salmon, T. W., P. A. surgeon, granted two months and ten days' leave of absence from Feb. 8, 1911.
Sinclair, A. N., A. A. surgeon, granted one month's leave of absence, with pay, and four months and fifteen days, without pay, from April 1, 1911.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

STATE LEGISLATION ON PUBLIC HEALTH

Since the progress of state legislation was summarized in THE JOURNAL, February 4, a number of additional bills have been reported. These are classified by states. The further progress of these bills will be reported in THE JOURNAL from time to time.

ARKANSAS

A bill has been introduced to provide for the punishment, by fine or imprisonment, of all those other than regularly licensed physicians who "by any verbal statement, writing, print, or other method, offer or profess to cure or treat any injury, disease or deformity of any human being by any drug, nostrum, manipulation or other expedient." The administration of domestic remedies is exempt, as are also midwives.

CALIFORNIA

A bill has been introduced to authorize the selection, by the state medical society, of 150 members as experts in various lines of medical knowledge, from which list seventy-five shall be selected by the board, acting with the attorney general of the state. This list is to be posted in the office of every county clerk for reference in all litigation or criminal cases. A bill has been introduced to provide that children attending schools may, in place of a vaccination certificate, file either a statement from the parent or guardian that he is conscientiously opposed to vaccination and will not consent to the vaccination of the child, or a certificate from a licensed physician to the effect that vaccination would seriously endanger the life or health of the child.

COLORADO

A bill providing for a state board of medical examiners of nine members has been introduced, also a bill creating an osteopathic board of examiners.

ILLINOIS

The following bills have been introduced in the Illinois legislature:

A bill to enable boards of education in cities over 100,000 to establish and maintain classes and schools for dependent, neglected and delinquent children; a bill to establish and maintain a home for widows, orphans and other dependents of persons losing their lives in hazardous occupations; a bill to regulate the practice of optometry (H. B. 121); a bill to provide for the inspection, licensing and regulation of cold storage warehouses (H. B. 123); a bill to amend the delinquent children law (H. B. 124); a bill to regulate the practice of optometry (S. B. 140); a bill for the prevention of cruelty to animals (H. B. 28); a bill to authorize the sterilization of habitual criminals, idiots, feeble-minded, and imbeciles (H. B. 49); a bill to amend the vital statistics law (H. B. 53); a bill to prohibit the establishing and enforcing the tuberculin test for dairy animals by any city or town (H. B. 55); a bill to amend the law regarding the suppression and prevention of contagious diseases among domestic animals (H. B. 56); a bill to provide for the establishment, erection and maintenance of sanitariums for tuberculous patients (H. B. 57); a bill to provide for the creation of public recreation districts (H. B. 73); a bill to provide for the establishment of a state sanitarium for persons afflicted with tuberculosis (S. B. 5); a bill to amend the law regarding marriages and to require a physician's certificate of health for a license to marry (S. B., 32); a bill to make an appropriation for the visitation and instruction of the adult blind (S. B. 74); a bill to forbid the issuing of policies insuring against accidental bodily injuries (S. B. 84).

The optometry bills introduced in the house and senate are similar to those previously introduced in Illinois and other states. The bill regulating the sterilization of habitual criminals and imbeciles is similar to the law adopted in Indiana and other states. Senate Bill 74, for the visitation and instruction of the adult blind, has been introduced at the request of the Chicago Women's Club. This bill would appropriate $20,000 for the use of the board of administration and provide for the visitation of the adult blind in their homes for the purpose of instructing them in industrial pursuits and helping to make them self-supporting.

INDIANA

The bill introduced by Senator McCarthy, providing for the medical inspection of school children, passed the senate by a vote of forty to one. The following bills have passed the house: H. B. 57 for the prevention of ophthalmia neonatorum; S. B. 57 to establish a Pasteur Institute.

The following bills have been introduced: A bill to amend the present medical practice act, introduced by Senator Stotsonburg, would give all graduates of approved medical colleges the right to practice without examination. The Board of Medical Registration, as well as the physicians of the state, is strenuously opposing this bill. A bill to amend the law regarding the operation of hospitals; a bill to require the medical inspection of all male applicants for a license to marry; a bill for the prevention of the transmission of venereal diseases, and a bill to regulate the sanitation and ventilation of steam and traction passenger cars and depots.

IOWA

Beside the osteopathic bill and the bill to create a health commission, which have previously been commented on, the following bills have been introduced: a bill to provide for the proper sanitation of barber shops; a bill to regulate cancer hospitals and sanitariums; a bill to regulate itinerant venders; a bill to require undertakers to report the names of persons dying of tuberculosis and to require the disinfection of premises occupied by infected persons and a bill to require physicians and osteopaths to report all cases of tuberculosis to the secretary of the State Board of Health.

MISSOURI

A bill to regulate the manufacture and sale of oleomargerine, a bill to provide for the medical examination of public school children, a bill to provide for a board of eclectic medical examiners (H. B. 52), and an optometry bill have been introduced. The house committee has reported unfavorably on the optometry bill.

NEBRASKA

A school medical inspection bill, endorsed by the Omaha Women's Club, has been introduced.

NEW HAMPSHIRE

An optometry bill (H. B. 40) has been introduced.

NORTH CAROLINA

A bill to permit physicians to register and practice on presentation of their diplomas, without obtaining a license from the State Board of Examiners, was introduced but has been reported on unfavorably by the house committee.

NORTH DAKOTA

The medical practice act introduced in the house, to place practitioners of all schools under the supervision of a single board, has passed the house and is now in the senate. A bill to provide for a board of control for all state educational, penal and charitable institutions has been introduced in the house.

OHIO

A bill to repeal the vaccination law, a bill to provide that no person suffering from tuberculosis shall be given a license to marry, and a bill to grant local boards of health the power to establish bureaus for the study of tuberculosis in their towns have been introduced.

OKLAHOMA

S. B. 70 would make all records of the State Board of Medical Examiners public records. S. B. 77 would amend the medical practice act, and S. B. 93 the State Board of Health act. S. B. 126 would preserve the purity of the waters of the state, including all streams and springs and all bodies of surface and impounded ground water, whether natural or artificial. Every municipality, private corporation, company, and individual supplying water to the public within the state would be required, within sixty days, to file with the secretary of the State Board of Health a certified copy of the plans of the water works and the source from which their water-supply is derived. All persons, corporations or municipalities supplying water for domestic purposes would have to secure a written permit from the State Board of Health.

OREGON

A bill to give the State Board of Health the powers of the state dairy and food commissioner has been indefinitely postponed. Bills to create a board for the examination of graduate nurses and to extend the powers of the State Board of Medical Examiners have been reported on favorably by the house.

TENNESSEE

A bill to incorporate laws regulating the practice of medicine, and making some amendments therein, has been introduced in both houses. This bill would provide that any person practicing or attempting to practice medicine under the name of any other person or firm would be guilty of a misdemeanor; would extend the term of members of the board from four to six years, and would make graduation from a medical college giving a four years' course a condition for license. A bill has been introduced to require a medical certificate as a condition for the issuing of marriage licenses.

UTAH

An amendment to the medical practice act has been introduced to make the attorney general an ex-officio member of the board and to make improper advertising and the performance of criminal abortions ground for revocation of licenses. An annual tax of $3.00 on all licensed physicians is also specified, the fund thus collected to be used by the State Board of Medical Examiners to prosecute violators of the law.

WASHINGTON

A bill to give the State Board of Health power to regulate traffic in oysters and other shell-fish has been introduced; a bill to amend the medical practice act, and a bill to provide for a commission to designate certain hospitals and surgeons in each locality who shall attend all injured persons and who shall be paid for their services from a fund furnished by the employer and employees. A bill to provide for a state tuberculosis sanitarium has been defeated. An amendment to the criminal abortion law has been introduced, to provide that women may testify without incriminating themselves.

WISCONSIN

An optometry bill has been introduced. Dr. C. A. Harper, the secretary of the State Board of Health, has introduced a bill to require the state health inspector to inspect hotels, jails, schoolhouses and public buildings, streets, alleys and other places; a bill to require cities to make adequate provision for the care of persons with advanced tuberculosis, and a bill for the prohibition of public drinking-cups in public buildings. An effort is being made to abolish the compulsory tuberculin test for cattle. A bill to provide for a more thorough system for the registration of deaths, a bill to prohibit the publication of the fact that a person has died of tuberculosis, and a bill to require a medical certificate before issuing a license to marry have also been introduced, as well as a bill to increase the tenure of office for health commissioners in cities, towns and villages, to four years.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Seventh Month—Third Weekly Meeting

INFECTIONS OCCURRING IN SURGICAL DISEASES AND CONDITIONS
SYMPTOMS OF TOXEMIA, SEPTICEMIA AND PYEMIA

TOXEMIA, SAPREMIA: History of local infection. Onset, fever, pulse, chills, gastrointestinal symptoms, headache, prostration, collapse. Blood-examination. Urine. "Typhoid" cases.

SEPTICEMIA: Intensity of symptoms, similarity to toxemia. Variations in symptoms due to different organisms. Blood changes. Clinical types: 1. Following local infection, gunshot wound, puerperium, trauma, etc. May be mild or severe. 2. Cryptogenetic septicemia; no history of previous infection. May be acute, subacute or chronic; may terminate in pyemia. 3. Due to mixed infection.

PYEMIA: Secondary to septicemia and toxemia. Difference in character and intensity of general symptoms. Symptoms indicating localization of metastatic abscesses; involvement of lung, pleura, cardiovascular system, brain, kidney, joints, eye, etc. Blood-examination. Course of pyemia, terminations.

TREATMENT

SEPTICO-PYEMIA OF VON LEUBE.

PROPHYLACTIC: Asepsis and antisepsis in prevention of infection.

SURGICAL: Removal of focus of infection. Prevent reinfection. Drainage of secondary infections. Production of artificial abscess.

SERUM-THERAPY: Antitoxic serums; bactericidal serums; serums raising resisting power of body or rendering bacteria more susceptible to phagocytes.

GENERAL: Elimination. Stimulation, alcohol, strychnin, quinin. Symptomatic treatment. Rectal or subcutaneous saline injections. Credé's colloidal silver injections.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

CONNECTICUT: Regular, City Hall, New Haven, March 14-15. Sec., Dr. Charles A. Tuttle; Homeopathic, Grace Hospital, New Haven, March 14. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave.; Eclectic, Hotel Garde, New Haven, March 14. Sec., Dr. T. S. Hodge, 19 Main St., Torrington.

ILLINOIS: Coliseum Annex, Chicago, March 2-4. Sec., Dr. James A. Egan, Springfield.

MAINE: Portland, March 14-15. Sec., Dr. F. W. Searle, 806 Congress Street.

MASSACHUSETTS: State House, Boston, March 14-16. Sec., Dr. Edwin B. Harvey, Room 159, State House.

WYOMING: Laramie, March 7-9. Sec., Dr. J. B. Tyrrell.

The Conference on Medical Education and Legislation

This joint conference will be held at Chicago, at the Congress Hotel—formerly the Annex—March 1, 2 and 3. On the first day will be held the Seventh Annual Conference of the Council on Medical Education at which, besides the reports of the chairman and secretary, will be the following addresses:

"Entrance Examinations," by Dr. Thomas S. Fiske, Secretary of the College Entrance Examination Board, New York City.

"Subjects Included in the 'Two Years of College Work' Required for Admission to Medical Colleges," by Dr. Charles R. Bardeen, Dean of the School of Medicine of the University of Wisconsin, Madison.

"A Five-Year Medical Course," by Dr. J. George Adami, Professor of Pathology, McGill University, Montreal.

"Equipment and Instruction of the Laboratory Years," by Dr. E. P. Lyon, Dean of St. Louis University School of Medicine, St. Louis, Mo.

"Equipment and Instruction of the Clinical Years," by Dr. George Blumer, Dean and Professor of Medicine of Yale Medical School, New Haven.

"The Educational Function of Hospitals," by Dr. Frank Billings, Dean of Rush Medical College, Chicago.

"Valuation of Credentials," by Dr. Frank B. Hiller, Secretary of the Missouri State Board of Health, Jefferson City.

"The State License Examination," by Dr. Horace G. Norton, Secretary of the New Jersey State Board of Medical Examiners, Trenton.

"Interstate Reciprocity," by Dr. W. T. Gott, Secretary of the Indiana Board of Medical Registration and Examination, Indianapolis

On Wednesday evening, March 1, a special session will be held at which the "State's Responsibility in Medical Education and Public Health Matters" will be discussed. The speakers for the evening and their topics are as follows:

"Standards and Authority"—George Edgar Vincent, Dean of the Faculties of Arts, Literature and Science of the University of Chicago, and President-Elect of the University of Minnesota.

"The Responsibility of State Universities in Public Health Matters"—William L. Bryan, President of Indiana University, Bloomington.

"Professional Education a Duty of the State"—Edmund J. James, President University of Illinois, Urbana, Ill.

A joint conference will be held on the second day to discuss medical practice acts. The following addresses will be given:

"The Importance of the Regulation of Medicine in the Administration of State and Municipal Governments"—Edward J. Brundage, Corporation Counsel, City of Chicago.

"The Attitude of the Judiciary in the Enforcement of Medical Practice Acts"—Judge Jesse A. Baldwin, Appellate Court, Chicago.

"Considerations Which Should Influence Appointments on State Examining Boards"—Hon. A. O. Eberhart, Governor of Minnesota.

"What Should Be the Attitude of the State Toward the Practice of Medicine?"—Dr. M. L. Harris, Chicago.

"Regulation of the Practice of Medicine for the Public Good"—Charles R. Henderson, Professor of Sociology, University of Chicago.

"The Administration of Medical Practice Acts."

(a) "The Administrative Duties of the State Board of Medical Examiners"—Dr. A. B. Brown, Secretary of the State Board of Medical Examiners, Louisiana.

(b) "Medical Prosecutions and Revocation of Licenses"—A. C. Umbreit, Attorney for the Wisconsin State Board of Medical Examiners, Milwaukee.

(c) "The Defense of Medical Practice Acts in the Courts"—James N. Wilkerson, Attorney for the Texas State Board of Medical Examiners, Fort Worth.

(d) "Financing of State Board Work"—Dr. Herbert Harlan, President Maryland State Board of Medical Examiners, Baltimore.

On the third day the Seventh Annual Conference on Medical Legislation will be held. Representatives and members of the National Legislative Council will present reports from the various states regarding the legislative situation in each. Separate reports will be presented by the committees on Carroll memorial, medical expert testimony, optometry, model medical practice, etc. Dr. Henry M. Bracken, secretary of the Minnesota State Board of Health will speak on "The Needs of Public Health Legislation." Dr. Cressy L. Wilbur, chairman, statistician of the Division of Vital Statistics of the Federal Census will speak on "The Progress of Vital Statistic Legislation." Legislative problems will be discussed and plans for the coming year will be outlined.

California December Report

Dr. Charles L. Tisdale, secretary of the Board of Medical Examiners of the State of California, reports the written examination held at Los Angeles, December 6-9, 1910. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75, and not less than 60 in any one branch. The total number of candidates examined was 95, of whom 60 passed, including 15 osteopaths, and 35 failed, including 13 osteopaths. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
University of Arkansas	(1908)	75.5
University of California	(1910)	83.2
University of Southern California	(1906) 75.2; (1909) 87.1, 88; (1910) 84.4.	
College of P. & S., San Francisco	(1907)	80.6
California Eclectic Medical College	(1910)	78.3
Denver Homeopathic College	(1901)	78.7
George Washington University	(1910)	77.5
Northwestern University Medical School	(1904)	80.6
College of Physicians and Surgeons, Chicago	(1897) 78.1; (1905) 83.3; (1909) 76.3; (1910) 83.6.	
American Medical Missionary College	(1902) 76.9; (1909) 83.3	
Rush Medical College	(1900) 89; (1904) 83.2; (1909) 87.9	
Medical College of Indiana	(1903)	77.3
State University of Iowa, College of Medicine	(1885) 80.1; (1909) 79.6.	
Harvard University Medical School	(1908)	80
Tufts College Medical School	(1903)	81.3
Detroit College of Medicine	(1901)	76.2
University of Michigan, Dept. of Med. and Surg.,	(1892) 75.7; (1897) 86.4; (1901) 87.4.	
Hamline University	(1907)	76.5
University Medical College, Kansas City	(1905)	77.4
Omaha Medical College	(1902)	80.9
Columbia University, College of Physicians and Surgeons	(1894) 84.4; (1910) 84.3, 89.9.	
New York Medical College and Hosp. for Women.	(1892)	82.9
University of Buffalo	(1902)	77.4
Syracuse University	(1903)	75.1
Jefferson Medical College	(1884)	86.4
Hahnemann Med. Coll. and Hosp., Philadelphia	(1909)	75.5
Pulte Medical College	(1891)	80.1
Starling Medical College	(1900)	82.5
Cleveland Medical College, Homeopathic*	(1896)	87
Cleveland Homeopathic Medical College	(1902)	81.9
McGill University, Montreal, Quebec	(1904)	75

FAILED

College	Year Grad.	Per Cent.
Coll. of P. and S., Los Angeles	(1906) 67.7; (1908)	71
Cooper Medical College	(1910)	69, 64.9
College of Physicians and Surgeons, San Francisco	(1906) 66.7; (1909) 73.2; (1910) 73.4.	
George Washington University	(1906)	70.9
Hahnemann Medical College and Hospital, Chicago.	(1876)	80.3
Rush Medical College	(1883) 75; (1902)	70.9
University of Louisville	(1892)	73.4
Kentucky School of Medicine	(1906)	66.1
Louisville Medical College	(1895)	79.1
Coll. of Phys. and Surg., Baltimore	(1888)	64.6
Syracuse University	(1893)	75.8
Medical College of Ohio	(1883)	79.9
Pulte Medical College	(1894)	56.5
Miami Medical College	(1908)	71.8
Western Reserve University	(1879)	49
Eclectic Medical College, Cincinnati	(1885)	76.2
University of Nashville	(1902)	71.7

* Joined Cleveland University of Medicine and Surgery to form Cleveland Homeopathic Medical College in 1898.

Nebraska November Report

Dr. E. Arthur Carr, secretary of the Nebraska State Board of Health, reports the written examination held at Lincoln, Nov. 8-10, 1910. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 4, all of whom passed. Nineteen candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Creighton Medical College	(1910) 76.9, 82.7,	83.5
University of Nebraska	(1910)	89.7

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
College of Physicians and Surgeons, Chicago	(1904)	Illinois
Northwestern University Medical School	(1900)	Illinois
Rush Medical College (1888) Iowa;	(1909) (1910)	Illinois
American Medical Missionary College	(1906)	Illinois
Hering Medical College, Chicago	(1908)	Kansas
State University of Iowa, Coll. of Med.	(1904) (1910)	Iowa
Keokuk Medical College	(1898)	Iowa
Kansas Medical College	(1905)	Kansas
Louisville Medical College	(1894)	Wisconsin
College of P. and S., Baltimore	(1905)	W. Virginia
University of Michigan, Homeopathic College	(1882)	Michigan
Kansas City Hahnemann Medical College	(1906)	Arkansas
Ensworth Medical College	(1893)	Missouri
University Medical College, Kansas City	(1900)	Kansas
Jefferson Medical College	(1903)	Kansas
University of Rome, Italy	(1906)	Kansas

Book Notices

A MANUAL OF DISSECTION AND PRACTICAL ANATOMY OF HEAD AND NECK. For Students, Surgeons and Specialists. By Hubertus J. H. Hoeve, M.D., Professor of Anatomy in the Medical and Dental College of Drake University. Cloth. Price, $5. Pp. 598, with illustrations. H. J. H. Hoeve, Des Moines, Iowa, 1910.

In his preface the author says, "I came to the conclusion that the entire macroscopic anatomy for the dissecting-room and also for surgical purposes should be arranged in natural outline form, and consequently I have prepared this volume on the head and neck." The book contains 600 pages slightly smaller than those in Gray's "Anatomy," with the subject-matter arranged in typical outline form, with headings, subheadings and further divisions. As there is considerable descriptive text, and as the outline form is used in laying out the matter, the full space is occupied with this one region of the body. To put the "entire macroscopic anatomy" of a region such as has been selected into an outline, is a work that might appal one less hardy than the author. As to the real test of its merit the words of the author may be further quoted as follows: "To what extent I have failed in writing the much-talked-of and badly needed ideal dissector remains to be judged by my professional confrères."

The author is evidently an earnest advocate of the outline method with thoroughness in all its details. The extent to which this method expands the text is realized when we observe that two full pages are devoted to the omohyoid muscle and more than a page to the frontal artery and vein. Different casts of mind naturally vary the point of view, so that things are seen differently by different observers. So it is with outlines: while the frequent breaks in the description by the interpolation of headings, subheadings and other divisions disturbing consecutive reading are results naturally to be expected and willingly accepted in the usual synoptical treatment of a subject where the simple divisions amply suffice to suggest the rest of the matter under review, it becomes a matter about which there is much less likely to be a unanimity of opinion when besides this all the details are exhaustively filled in. Much that is valuable and difficult of access elsewhere is likely to remain hidden in the text on account of the tediousness of unraveling the outline.

The fifty-one half-tone illustrations are about equally divided between photographic reproductions and artists' sketches of original specimens. Although suggestive of interesting and instructive original specimens, the reproductions are not the best, and leave much to be desired. Thirty-nine of the illustrations are devoted to the brain, three to sections of the head, three to sections of the larynx and pharynx, three to sketches of the orbit, and one each to the mastoid region, the veins of the diploe, and the skull with relation to the ventricles of the brain. With due respect for the author's pride in presenting none but original illustrations, one cannot help noting the absence of the beautiful figures of dissected regions that are so characteristic of the usual works of this class, and which more than any other single feature serve to stimulate the student to neat and thorough work.

THE PHYSIOLOGY OF REPRODUCTION. By Francis H. A. Marshall, M.A., Fellow of Christ's College, Cambridge. With a Preface by Prof. E. A. Schäfer, F.R.S., and Contributions by William Cramer, Ph.D., and James Lochhead, M.D. Cloth. Price, $6. Pp. 706, with illustrations. New York: Longmans, Green & Co., 1910.

Marshall presents this subject in the most exhaustive treatise that has appeared for some time. The earlier chapter-heads in order are: "The Breeding Season," "The Estrous Cycle in the Mammalia," "The Changes that Occur in the Non-Pregnant Uterus During the Estrous Cycle," "Changes in the Ovary," "Spermatogenesis — Insemination," "Fertilization," "The Accessory Reproductive Organs," "The Biochemistry of the Sexual Organs," and "The Testicle and the Ovary as Organs of Internal Secretion." In this last-named chapter the author makes a most valuable contribution to the literature on the subject. He gives in detail the results of the experimental work of Brown-Séquard, Poehl, Zoth, Pregel, and Bouin and Ancel, Shattock and Seligmann, Boruttau, Ribbert, Carmichael and Marshall, Knauer, Halban, Morris, Glass, Dudley, Essen-Möller, Graefe, Flatau, Kleinhaus and Schenk, Dubreuil and Regaud, Lane-Claypon, Paton, Henderson, Soli, Fichera, Starling and many others. Summing up his fifty pages of review, Marshall says: "The fact that the testis is an organ of internal secretion seems now to be definitely proved. This secretion is probably formed throughout the entire reproductive period of an animal's life; but, in those animals which experience a periodic rut, it is no doubt at this season that the testicular hormone is produced in greatest abundance."

What the author said about the testes might with equal truth have been said about the ovaries. In fact, it may be taken as positively demonstrated that these glands through their internal secretion profoundly influence development throughout the reproductive period and especially during adolescence.

Other chapters in the book concern fetal nutrition and the changes in the maternal organism during pregnancy; the innervation of the female generative organs; lactation; fertility; the factors which determine sex. This last chapter, next to that on the internal secretion from the sex glands, will be of most interest to the practitioner, as Marshall devotes considerable space to the consideration of various theories with accumulated data and evidences pro and con.

The book is well illustrated; some of the illustrations are in colors, many of them new and all of them valuable.

While Marshall has covered ground frequently covered in the preliminary chapters of works on obstetrics or in the final chapters on physiologies, the survey is incomparably more complete than one will find in any of the works mentioned, and will be valued highly by those students of obstetrics who wish to familiarize themselves with the latest and best on this subject.

A MANUAL OF PHYSIOLOGY. With Practical Exercises. By G. N. Stewart, M.D., Professor of Experimental Medicine in Western Reserve University, Cleveland. Sixth Edition. Cloth. Price, $5 net. Pp. 1064, with 450 illustrations. New York: William Wood & Co., 1910.

The fact that this is the sixth edition is ample proof of the popularity of Stewart's "Physiology." And the fact that these six editions have appeared at intervals during fifteen years is proof of the book's worth; it has worn well. This edition is a little larger than the others, owing to the addition of new matter; but the volume is not too bulky to be held for comfortable reading.

Mention of the good qualities has been often made, and need not be here repeated; but one cannot refrain from commending the clear style that makes abstruse subjects, which easily become monotonously dull, plain and interesting. Sometimes an illustrative comparison strikes one as a little odd, such, for instance, as this concerning the heart: "Like a musical box devised to play a series of melodies in a fixed order, and from which a particular tune cannot be obtained till those preceding it have been run through, the heart in some way or other is arranged, in the presence of competing impulses from its extrinsic nerves, to play the tune of inhibition before the time of augmentation" (p. 146). Yet we would not have it changed, for the comparison is apt and the student will remember the fact because put in this striking way. There is a remarkably equable distribution of space allotted to different topics and an evenness of treatment that is too often missed in composite works by different writers. The details of experiments are plainly given. And there is a most admirable condensation without sacrifice of clearness and of needful detail which shows the hand of the investigator who at the same time can teach and explain. The author rarely permits himself to run into wearisome argument; there is almost nothing of the polemic. His own views on debatable questions are always definitely stated. Where no decision has as yet been reached this is frankly acknowledged. His judicial attitude is well brought out by his excellent discussion of the myogenic and neurogenic theories as to the heart-beat. While favoring the latter theory in many respects, he takes a neutral position, for on many of these points, he says, the proof is not yet convincing.

We wish that he had departed a little more from the original plan and had cited authorities a little more freely. Medical students would be incited often to consult originals if instead of being told that "it has been recently shown," they were given as well the author and reference. We realize the impossibility of loading up the pages with all the authorities consulted and the inadvisability, as well, of using such a

mass of names; but a little breaking of the rule now and then, and the insertion of a bibliographic reference, especially when it concerns some classic article or some really worthy contribution, would make the work a still greater help to the student. As it is, this work is certainly one of the very best text-books on physiology for the undergraduate and a reliable reference-book for the practitioner.

LEHRBUCH DER UROLOGIE, MIT EINSCHLUSS DER MÄNNLICHEN SEXUALERKRANKUNGEN. Von Dr. Leopold Casper, Universitätsprofessor in Berlin. Paper. Price, 15 marks. Pp. 575, with 221 illustrations. Berlin: Urban and Schwarzenberg, 1910.

The first edition of Casper's well-known book has been translated into English. This, the second German edition, is an enlargement and improvement of the first edition.

The subject-matter is handled in two parts. In the general part is considered the anatomy, physiology and examination of the urogenital tract. The physical and chemical examination of the urine is given so briefly that the subjects could well have been omitted. Since the author has written a work on cystoscopy, it is but natural that he should treat that subject rather briefly here. The subject suffers, also, by being poorly illustrated. The chapter on urethroscopy would be more valuable if the illustrations were not so poor and if it included a consideration of the use of the Goldschmidt urethroscope. On the whole, the chapter on diseases of the urethra and penis is good; we must, however, differ from the author when he says that non-gonorrheic urethritis is very rare. We were surprised and disappointed to find no mention made of erosive or gangrenous balanitis, a disease which produces such fearful mutilations of the penis and which is surprisingly frequent when one is familiar with the clinical picture. The chapter on urethral stricture covers the subject satisfactorily and we are pleased to observe that the author condemns the operation of external urethrotomy except in selected cases.

Diseases of the bladder are covered fully, and lithotripsy is advised in preference to the more radical operation. Vaccine therapy in urology deserves rather more extensive consideration than it receives. The chapter on the kidneys would be improved by omitting the consideration of nephritis and enlarging on the subjects of nephrolithiasis and tumors. Since the author is a pioneer in the work, naturally a good deal of space is devoted to the functional diagnosis of renal affections. This should appeal especially to American surgeons, since this subject, until recently, has been somewhat neglected in this country.

The subject of tuberculosis of the genito-urinary system is well covered in the chapters devoted to the various organs. The author believes in the radical treatment of tuberculosis of the kidney. Probably the best chapter in the book is that on disease of the prostate, in which Young's operation for prostatectomy was given the preference.

Considering their frequency, the functional disturbances of the male sexual organs are considered somewhat too briefly.

CHRONICLES OF PHARMACY. By A. C. Wootton. In two volumes. Vols. I and II. Cloth. Price, $6.50 net. Pp. 760, with illustrations. New York: The Macmillan Co., 1910.

These two volumes are filled with curious and interesting information, the result of an immense amount of painstaking labor. The history of pharmacy is traced from its mythical beginnings to the present time. Through a great part of this course it is almost identical with the history of medicine, although Wootton has paid special attention to the drugs mentioned by ancient writers. Following a chapter dealing with the myths of pharmacy, the author gives in succession what is known of pharmacy among the ancient Hebrews, Egyptians, Greeks and Romans. The story is traced through the Arabs to the middle ages, when the account becomes more definite and truly historical. An interesting chapter is the one devoted to the progress of pharmacy in Great Britain. Succeeding chapters deal with "Dogmas and Delusions," "Masters in Pharmacy," "Chemical Contributions," and other topics, such as "Poisons in History," "Noted Nostrums," etc.

The author has made an interesting and instructive book. His death before the publication of his work is deeply to be regretted. The volumes are attractively bound and illustrated by a considerable number of portraits and pictures of statues and other subjects related to pharmacy.

CYSTOSCOPY AS ADJUVANT IN SURGERY. With an Atlas of Cystoscopic Views and Concomitant Text for Physicians and Students. By Staff-Surgeon Dr. O. Rumpel, Lecturer in Surgery at the University of Berlin. Only authorized English translation by P. W. Shedd, M.D., New York. Half leather. Price, $8.50. Pp. 131, with 107 illustrations. New York: Rebman Co., (1910).

The first fifty-nine pages of this book are devoted to the text, the subject being considered under "Congenital Anomalies," "Cystitis," "Tumors," "Hypertrophy of the Prostate," "Concretions and Foreign Bodies," and "Testing Renal Function." In the text are twenty-two illustrations. The text is rather brief and often simply explanatory of the plates which follow. The testing of renal function receives scant attention, and hence the chapter on that subject is quite unsatisfactory. Following the text are thirty-six plates in color, showing eighty-five views of various conditions found in the bladder. They are all, of course, cystoscopic views, and the outline and coloring are very good, but they are all pasted on the pages and at times without regard to "up" and "down" of the picture, so that they are often confusing in this particular. Opposite each plate is a description of the figures and frequently a short history of the case.

HAY FEVER AND PAROXYSMAL SNEEZING (VASOMOTOR RHINITIS). By Eugene S. Yonge, M.D., Physician to the Manchester Hospital for Consumption and Diseases of the Throat. Cloth. Price, $2 net. Pp. 150, with illustrations. New York: William Wood & Co., 1910.

Under the title of "hay-fever" the author has described three separate conditions—hay-fever (hay-asthma), paroxysmal sneezing (vasomotor rhinitis) and idiopathic rhinorrhea (nasal hydrorrhea). The first he distinguishes by ascribing as its chief etiologic factor the pollen of plants; the second depends more largely on neuroses and pathologic conditions of the upper respiratory space; and the last he attributes to neurotic condition more largely, to chronic sinus diseases or to trauma. The constitutional states as predisposing factors overlap in the three conditions. The subject is treated historically and from the standpoint of the different theories and hypotheses. The frequent association of asthmatic symptoms is kept in view, but nothing is said about the theory of anaphylaxis as a factor. Not much that is new is advanced in the treatment. The work is an interesting review of the subject.

DIAGNOSIS AND TREATMENT OF DISEASES OF WOMEN. By Harry S. Crossen, M.D., Professor of Clinical Gynecology, Washington University. Second Edition. Cloth. Price, $6. Pp. 1025, with 744 illustrations. St. Louis: C. V. Mosby Co., 1910.

The second edition of this work has been considerably expanded in the text, and numerous original illustrations added, which further elucidate diagnostic methods. Among the subjects given added attention are pelvic inflammation and tubal pregnancy. The index has also been amplified, but laboratory methods, except in the instance of gonorrhea, are not included, a matter which was mentioned in our extended review of the first edition. Surgical treatment is still subordinated. The elaborate attention given to diagnosis, and to treatment other than surgical, makes this a good work for the student and general practitioner.

DIE FAECES DES SÄUGLINGS UND DES KINDES. Die Bedeutung und Technik ihrer Untersuchung. Von Dr. Adolf F. Hecht, Kinderarzt in Wien. Mit Einem Vorwort von Dr. Th. Escherich. Paper. Price, 8 marks. Pp. 186. Vienna: Urban & Schwarzenberg (American Agents, New York: Rebman Co.), 1910.

This volume is the result of seven years of careful observation and study of this important subject in Escherich's clinic in Vienna. The subject is treated exhaustively and the result is equally valuable as a book of reference for the pediatrician or the general practitioner, or as a guide to the investigator. The author is fortunately a clinician as well as a laboratory investigator. One can freely endorse Escherich's warm commendation of the book to any one who is interested in this increasingly important subject.

DIFFERENTIAL-DIAGNOSTISCHE TABELLEN DER INNEREN KRANKHEITEN. Von J. Clemach, in Wien. Paper. Pp. 21. Price, 3 marks. Munich: J. F. Lehmans Verlag, 1910.

This little volume contains twenty-one tables in which the symptoms and physical findings of allied diseases are tabulated in parallel columns. It has the faults and merits inherent in all such treatises. The clinician finds the symptoms stated too arbitrarily and dogmatically to be of value. The student who must prepare for examination, however, will appreciate the condensed summaries and the convenient arrangement of the data.

Medicolegal

Liability for Professional Service, Board and Nursing for Wife at Hospital

The Second Appellate Division of the Supreme Court of New York in the case of Thrall Hospital vs. Cecelia T. Caren (124 N. Y. S., 1038) reverses a judgment rendered for the plaintiff, and grants a new trial. It says that the action was to recovery for board, nursing, etc., received by the defendant. It appeared that while her husband was sick in the hospital she was removed to it for an operation for appendicitis. Her attending physician made the arrangements for her admission to the hospital through a physician connected with the institution. She was too ill to make provision for herself, and did not. Indeed, her illness was so severe that the proposal to present a bill to her was postponed and the charges were not communicated to her until her departure, when she said she would send a check for them. Thereafter a bill for the amount was presented to her husband, then one was sent to her with a letter requesting payment, and this not receiving attention, a bill was later presented to the husband's estate. Thus the case was one where a woman, whose husband was in the hospital, and who was herself too ill to contract, was received by it pursuant to arrangements made by the physician in attendance cooperating with a physician connected with the hospital, and on discharge promised to send a check for the bill, which was presented to her husband and to his estate, and intermediate such two presentations to herself, without attention by her. She did not engage the physician, so far as appeared. She did not promise to pay before the service was rendered. Did the law imply a promise? The answer is:

The defendant seemed to have had a home. Her physician advised her that she should go to the hospital, and made the arrangement through a physician connected with the hospital. A physician's service is a necessity that should be furnished by the husband, and presumptively was in this case, either through himself, or her implied authority to call a physician to attend a member of the family. The physician so acting for the husband advised her to go to the hospital, and she went accordingly. So the professional service was necessarily rendered in the hospital, and for it the husband was primarily liable. The board and nursing were incidental to such service. It might be that the husband elsewhere supplied a home and sustenance for her; but the room, board and attendance at the hospital were for a different purpose and inseparable from her treatment. In this view the plaintiff, thoroughly informed, should have regarded the husband as its debtor, unless the defendant expressly engaged the service, and thereby became personally liable. But there was not the slightest evidence that she did or was able to do that. Indeed, the plaintiff carefully refrained from broaching the subject until the time of her departure, when the defendant promised to send a check. Such statement did not cast the obligation on her. A wife does not become the principal debtor, or surety for her husband's debt, by promising to send a check for it, even if her own check is indicated.

Duties of Carriers to Sick Passengers and When Not Liable for Unusual Pain

The Supreme Court of Georgia says, in Central of Georgia Railway Co. vs. Madden (69 S. E. R., 165), that it is not one of the ordinary undertakings of a carrier of passengers to furnish nurses or medical attention. This idea has been expressed by saying that the carrier does not conduct a hospital. If one who is sick, with knowledge of the fact, gets aboard a train, he cannot complain that he suffers pain because of such sickness, or that the ordinary and necessary motion of the train increases his pain, without negligence on the part of the carrier; or that he lacks medical attention or nursing, with which he has not provided himself, and which the carrier has not agreed to provide for him. Nevertheless, a carrier of passengers does not deal with the strong and well and the vigorous alone; and a condition may arise by reason of the sickness of a passenger on its trains which will create an emergency imposing on the carrier the duty of dealing with the passenger in accordance with the situation thus arising.

If it should be ascertained that a passenger was suffering with small-pox, the carrier not only might cause him to leave the train before arriving at the destination pointed out in his ticket, but, under its duty for the protection of its other passengers, it might become necessary to compel him to do so. So, also, if a passenger should have a ticket for a journey of 1,000 miles, and after he had been carried 100 miles it should be ascertained by the conductor of the train that such a passenger was in a dying condition, it could hardly be successfully urged that the agents of the carrier could wholly ignore this situation and allow the man to die, without opportunity for obtaining assistance or attention, merely because he had not reached the destination pointed out in his ticket. It will thus be seen that circumstances and emergencies may raise a duty on the part of the carrier to afford a passenger a reasonable opportunity to leave the train and to obtain assistance before reaching the destination originally intended.

So if a passenger on a railway train becomes ill in transit, and this is known to the servants of the carrier in charge of such train, or is so apparent that they are charged with knowledge of it, it is their duty to give him or her such care and protection beyond that demanded under ordinary circumstances as is reasonably practicable with the facilities at hand and consistent with the safe and proper conduct of the business and the safety and comfort of the other passengers.

More particularly, the court holds here that where a female plaintiff contended, and introduced evidence tending to prove, that she became ill while on board a passenger train, and that the carrier was negligent in failing, on request, to afford her opportunity to leave the train in order to procure assistance and medical attention, and in failing to assist her in leaving it after knowledge of her condition, but that she succeeded in getting off, though suffering extreme pain and about to be delivered of a child, it was not error to refuse to charge the jury that, if they believed she was able to leave the train without the assistance of the conductor, she would not be entitled to recover damages.

But it was error to charge that "the defendant would not in any event be responsible for such pain as she (the plaintiff) would have suffered on account of the birth of a child. For pains incident to childbirth, if no more, if not unusual pain, you should find for the defendant." That implied a necessary right to recover for unusual pain; but the mere fact that a woman under such circumstances may have suffered more than usual pain would not entitle her to recover damages. If there could be a recovery, it must be for that which resulted from a want of due care on the part of the carrier or its agents, while there may have been a premature delivery, and unusual pain, caused by the ordinary motion of the train, without negligence or liability on the part of the defendant.

Society Proceedings

COMING MEETINGS

American Medical Association: Joint Conference on Medical Education and Medical Legislation, Chicago, March 1-3.
Association of American Medical Colleges, Chicago, February 27-28
Medical Society of the Missouri Valley, St. Joseph, Mo., March 16-18.
Natl. Confed. of State Med. Exam. and Licng. Bds., Chicago, Feb. 28.

NORTH CENTRAL SECTION OF THE AMERICAN UROLOGICAL ASSOCIATION

Meeting held in Chicago, Jan. 5, 1911

DR. R. H. HERBST, President of the Chicago Urological Society, in the Chair

Position Drainage in Suprapubic Prostatectomy

DR. HENRY J. SCHERCK, St. Louis: The principal objection to the ordinary form of drainage, either siphon or suction, is that it does not completely empty the bladder of decomposed or septic urine, and allows it to become absorbed in a freshly wounded bladder and space of Retzius. The abdominal

position does not allow the septic material to remain in contact with these surfaces, and this minimizes the chances of absorption.

DISCUSSION

DR. L. W. BREMERMAN, Chicago: I can drain the bladder suprapubically or perineally by automatic interrupted siphonage. During the first twenty-four hours following suprapubic prostatectomy the bladder can be emptied every five minutes, keeping it dry and keeping the dressing on the abdomen practically dry and making the patient comfortable.

DR. GUSTAV KOLISCHER, Chicago: The prone position was used in various conditions years ago, and in spite of it, many patients developed hypostatic pneumonia. The real dangers following suprapubic prostatectomy or any suprapubic operation are postoperative hemorrhage and infection around the bladder.

DR. E. G. MARK, Kansas City: The things to look after following suprapubic operation of any kind are hemorrhage, infection or infiltration into the abdominal wall or perivesical tissues, and hypostatic pneumonia. I am convinced that position has a great deal to do with the development of hypostatic pneumonia.

DR. R. B. F. GRADWOHL, St. Louis: The method of drainage described by Dr. Scherck is admirable in respect to the prevention of hypostatic pneumonia.

DR. ARTHUR DEAN BEVAN, Chicago: I take a tube about the size of the index finger, measuring it accurately, so that it will project ¾ of an inch into the bladder, then I take a fine catgut suture and introduce it into the suprapubic wound, stitching both above and below the tube. It almost invariably requires but a single suture above and a single suture below the tube. This suture passes through, first, the bladder wall, and second, takes a good bite of the tube and goes through the opposite wall, and is then tied. In the space between the bladder and symphysis we tuck in a small cigarette drain with iodoform gauze, projecting beyond the gutta percha.

Genital Tuberculosis

DR. F. W. ROBBINS, Detroit: In only two of twenty cases of genital tuberculosis was it possible to trace a relationship between tuberculous epididymitis and a previous gonorrhea. In neither of these patients was the tubercle bacillus found, and the diagnosis of tuberculosis may well be questioned. Rarely does genital tuberculosis follow venereal disease. About 60 per cent. of cases of genital tuberculosis are a part of the general tuberculous infection. Occasionally the disease may be so located in the external genitals as to make radical operation wise, but more often the disease of the external organ is associated with that of the prostate and vesicles, even when the bladder and kidneys are healthy. It is seldom good practice to do the extensive operation recently described by Whiteside.

DISCUSSION

DR. HUGH CABOT, Boston: I have never seen a case which occurred in such a way as to suggest that gonorrhea was the cause of the subsequent tuberculosis.

DR. D. N. EISENDRATH, Chicago: In two cases I saw there was a direct relation between gonorrhea and tuberculosis In both cases a preceding gonorrhea had seemingly furnished the ground for the localization of the tubercle bacillus. One patient had a greenish discharge containing gonococci, and enlargement of both epididymes. The other patient had an abscess which ruptured through the scrotum. Gonococci were found in the pus. I advised antigonorrheal treatment, and it was instituted for two months without benefit. We examined the pus discharge for tubercle bacilli and found a large number of them. The whole course lasted about a year. The patient died from uremia. Autopsy showed extensive tuberculosis, a mixed infection where we had removed the epididymis, and in the kidneys, also showing gonococci, tubercle bacilli in the kidneys, pus, and a stone in the kidney.

DR. R. H. HERBST, Chicago: A man had a large nodule in the upper pole of the epididymis, the size of an English walnut, in the region of the external ring, and painful, two nodules in the prostate, had frequency of urination. He was put on tuberculin. The nodule at the external ring and the nodules in the prostate disappeared, as well as the frequency of urination, one week after treatment. He still has a small nodule in the upper pole of the epididymis. Tuberculin, if used properly, is valuable, and should be used in almost every case.

DR. G. FRANK LYDSTON, Chicago: It is not an easy matter to prove the association between gonorrheal infection and genital tuberculosis. A large majority of cases of genital tuberculosis have been preceded by gonorrhea. If it is true that gonorrheal infection reduces resistance and does not predispose to tuberculosis, then we have a rule that differs from all other rules with reference to tuberculosis. An individual with a lowering of the power of resistance in the mucosa, other things being equal, is particularly susceptible to infection by the tubercle bacillus. The chief argument against the relation of gonorrhea to tuberculosis of the urogenital tract was missed altogether by the opponents of that theory, and that is that infection, as a rule, is descending, coming from the kidney, and from the substance of the kidney rather than from the pelvis, excepting secondarily. Gonorrheal infection of the kidney is relatively exceptional, as contrasted with the sum total of cases of gonorrhea.

A Case of Air Embolus Occurring During Operation Under Air-Inflation Urethroscopy

DR. ERNEST G. MARK, Kansas City, Mo., read a paper with the above title. It was published in THE JOURNAL, Feb. 11, 1911, page 419.

Local Paresis of the Urinary Bladder

DR. GUSTAV KOLISCHER and DR. HARRY KRAUS, Chicago: Certain cases of paresis of the bladder are caused by edema of the bladder wall. This edema may be produced by gross mechanical interference with the circulation by the impaction of tumors, or by inflammatory changes in the adjacent organs. That the bladder is paretic is shown by the fact that catheterization alone does not lead to a satisfactory emptying of the bladder, but that outside pressure has to be resorted to in order to express all the urine. That the edema of the detrusor is the cause of the vesical paresis is proved (1) by the cystoscopic findings; (2) by the palpatory findings after the bladder was drained; (3) that there are no disturbances of the central nervous system to be found; (4) that this bladder paresis disappears without any special treatment after the factors that interfere with the circulation are removed.

The Caput Epididymis an Excretory Organ

DR. WILLIAM T. BELFIELD, Chicago: The head of the epididymis is a part of the middle kidney, which functionates as a kidney in frogs and fishes, but is superseded in man by the permanent kidney. The efferent tubules constituting the head of the epididymis are the convoluted tubules of this early kidney. That they are secretory organs is indicated by the motion exhibited on traversing these tubules by the previously motionless spermatozoa. Their excretory function is indicated by the infection of these tubules with various organisms derived from the blood, e. g., those of tuberculosis, syphilis, typhoid, and the colon bacilli. These infections may extend along the genital tract to the prostatic urethra. Until recently, all infections of the kidney were assumed to ascend from the bladder. It is now known that many infections of the bladder descend from the kidney. Similarly we have been accustomed to regard all infections of the genital duct as ascending from the deep urethra; but must realize that in certain cases these infections begin in the convoluted tubules (head) of the epididymis and descend to the vesicles and deep urethra, there being a complete analogy between the second kidney (caput epididymis) and its duct on the one hand, and the third (permanent) kidney and its duct on the other. Hence, to limit treatment of all genital duct infections to the prostate and vesicles is as irrational as to limit treatment of all urinary infections to the bladder.

Other papers read were "Diagnosis in Advanced Cases of Renal Tuberculosis," by Dr. H. Cabot, Boston; "Salvarsan in Syphilis," by Dr. C. Wagner, Chicago; "Operation Cystoscope," by Dr. W. N. Senn, Chicago.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York

February 4

1 *Electrocardiograms and Their Significance. T. E. Satterthwaite, New York.
2 *Use of Electricity in Chronic Disorders of the Stomach. L. H. Levy, New Haven, Conn., and J. G. Wells, New York.
3 Direct Transfusion. F. D. Gray, New York.
4 *Percussion of the Kidneys. O. Lerch, New Orleans.
5 Keratitis Ex Acne Rosacea. W. B. Weidler, New York.
6 Recognition and Treatment of Gonorrheal Urethritis and Cystitis in Women. W. E. Dannreuther, New York.
7 Clinical Value of Blood-Pressure Studies. F. A. Faught, Philadelphia.

1. **Electrocardiograms.**—The Einthoven electrocardiographic machine is described by Satterthwaite. He says that the sensational statements which have appeared in the public journals as to the utility of the instrument must be received with much caution. The electrocardiogram does not as yet of itself distinguish uniformly functional from organic heart diseases; neither can the instrument dispense with the personal examination of the patient. Hence, a complete diagnosis cannot be made by the instrument when the patient and the physician are far apart. Strictly speaking, Einthoven has not inaugurated a new method; he has utilized the photographic method of Marey, and the string galvanometer of Ader, while the credit of the completed instrument is due to Edelmann. Einthoven has, however, given close study to the method with the perfected instrument, and he is, therefore, entitled, more than any other man, to have electrocardiography associated with his name. The instrument is capable of showing the time and force of action of ventricles and auricles; notes lack of transmission; and demonstrates ventricular and auricular extrasystoles more clearly than any other method. It is certainly useful in various forms of arhythmias, particularly when there is more or less complete auriculo-ventricular dissociation. At present, however, the initial cost of the Einthoven machine, and the expense connected with operating and maintaining it, will be a bar to its general use, except in the larger hospitals or research laboratories.

2. **Electricity in Chronic Disorders of the Stomach.**—Levy and Wells advocate the use of electricity in treatment of most chronic diseases of the stomach, which have not responded to the regular medicinal methods of treatment and diet.

4. **Percussion of the Kidneys.**—Lerch uses the drop stroke in percussion instead of the hammer stroke. He uses an ivory pleximeter and a hammer with rubber-covered head. By the drop stroke he eliminates the personal factor in percussion and gets more accurate results. He can map out accurately any of the internal organs by this method. The kidneys may be mapped out in the normal position and when displaced. The author has studied his method on the cadaver, and states that one may determine by it whether both kidneys are affected in Bright's disease, and the increase in bulk of the organs.

Boston Medical and Surgical Journal

February 2

8 *Reflexes in Surgical Diagnosis. R. T. Morris, New York.
9 Disturbances Dependent on Eye-Strain. E. M. Alger, New York.
10 *Reflexes and Reflex Neuroses from the Upper Air Tract. W. S. Bryant, New York.
11 *Reflex Disturbances Referable to the Ear. J. R. Page, New York.
12 What Is the Meaning of Reflex? E. D. Fisher, New York.
13 Reflex Symptoms and Disease of the Nervous System. W. M. Leszynsky, New York.
14 *Intravenous Use of Cocain. P. W. Harrison, Boston.
15 Surgical Treatment of Gonorrheal Epididymitis. G. G. Smith, Boston.
16 A New Tonsil Knife. O. A. Lothrop, Boston.

8. **Reflexes in Surgical Diagnosis.**—Morris claims that many cases of neuralgia, treated medically, belong distinctly in the surgical class. Lumbago, or neuralgia of the sciatic nerve, often is due to an enlarged prostate gland, distended seminal vesicles, pelvic adhesions and to septic or mechanical disturbance of the uterus and adnexa. Cases of trigeminal neuralgia are commonly treated on medical diagnosis alone, and patients often say that they have not even been questioned, by neurologists of standing, relative to peripheral irritations. Morris recently operated on a patient who had suffered intensely from trigeminal neuralgia, and who had been given alcohol injections by a most competent surgeon interested in that subject, but who had not examined the pelvis at all. So intense was the woman's suffering, that at the time of the last alcohol injection, she prepared a fatal dose of morphin in a glass of water to be taken just before her anesthesia. She wished to commit suicide but to avoid disgrace to the family by having it appear that she had died from the influence of the anesthetic. The reason why she did not take the dose was that at the last moment the anesthetist refused to allow her the glass of water. When she came under Morris' care, a little later, and a large ovarian cyst was removed, the neuralgia disappeared promptly, excepting for an occasional twinge of the supra-orbital nerve at times when the barometer is low. In this case the ovarian cyst was the precipitating factor in a patient, no doubt, predisposed to trigeminal neuralgia. In another case, a woman had suffered terribly from "neurology" as she put it. In this case, Morris excised a portion of the inferior dental nerve, giving relief for about a year. On the return of the neuralgia, he sent her to a competent ophthalmologist to determine if eyestrain could be a peripheral factor in the case. The neuralgia was apparently cured permanently by correction of eye muscle imbalance.

10. **Reflexes and Reflex Neuroses from the Upper Air Tract.**—Bryant shows that the reflexes and reflex neuroses emanating from the pharynx in number and significance are second only to those arising from the nose.

11. **Reflex Disturbances Referable to the Ear.**—A plug of impacted cerumen, says Page, has been known to produce, through its irritation of the external auditory canal, its interference with the pressure equilibrium of the middle ear, and, consequently, that of the labyrinth, nearly every known reflex disturbance, even suicidal mania.

14. **Intravenous Use of Cocain.**—The subject of experiment during the past three years, three times had local anesthesia produced with cocain—once of a finger, once for work on teeth, once because of a boil on the back of the neck. The analgesia produced at these times was not different in character or duration from that usually seen. There had been no other use of cocain or allied drugs. This experiment was performed as follows: Into one of the superficial veins of the back of the hand there were slowly introduced 5 grains of cocain in a 2 per cent. solution. The introduction of the solution was completed in about thirty minutes. Dizziness and palpitation made it seem wise to stop with this amount. Tests of the patient's condition were made at once and results were found to correspond in an incomplete way with those reported for animals. Cerebration was normal, except for a restless inability to keep the mind long on one subject. Motor power was unimpaired. There was marked analgesia everywhere. An incision ¾ of an inch long through the skin, well down into the fat, was made on the anterior surface of the lower leg. This incision could be felt; it caused a mere trifle of pain. Two or three small nerves in the fat were cut; each caused a slight twinge of pain. Apparently operative procedure might readily have been undertaken with only very moderate discomfort. Two hours later a similar central incision was made on the opposite side. The sensation of pain had by this time recovered much but not all of its normal intensity. It would seem evident, then, that however suited to animals this method may be, the relatively enormous dose necessary for even an imperfect result makes it impossible for human surgery. (This experiment is of peculiar value, since the experiment was performed by the writer on himself.)

New York Medical Journal

February 4

17 Salvarsan in Syphilis. S. Pollitzer, New York.
18 *Diet in Typhoid. C. E. Nammack, New York.
19 Measurement of Arterial Blood-Pressure in Man. G. Bachmann, Atlanta.
20 Treatment of Skin Diseases with Solid Carbon Dioxid Snow. E. Pisko, New York.
21 *A Case of American Relapsing Fever. W. Baetz, Ancon, Canal Zone, Panama.

22 Syringe for Local Anesthesia in Rectal Operations. J. F. Saphir, New York.
23 Avoidance of Mistakes in Diagnosis of Foot Troubles. M. Strunsky, New York.
24 Pneumocele of the Lacrimal Sac. E. M. Blake, New Haven, Conn.

18. **Diet in Typhoid.**—When milk disagrees, when there is abdominal distention, and when curds appear in the stools, Nammack's favorite formula is milk, 4 ounces; fresh cream, 1 ounce; lime water, 1 ounce. This is given every three hours, and is followed by a mixture of dilute hydrochloric acid, 10 minims in 1 dram of a reliable essence of pepsin. To this prescription, strychnin is added when required. Between each two portions of milk, albumin water, made by adding the white of 1 egg to 6 ounces of boiled water, is given. The patient is also solicited to drink plain water freely. If there is complete intolerance or aversion to milk, then buttermilk or kumyss or kefir can frequently be borne. There is no danger, in Nammack's opinion, in forcing this quantity of fluid through the cardiovascular apparatus and the kidneys, unless acute nephritis exists as a complication. In that case it is both useless and injurious to attempt to drive this quantity of liquid through an inflamed and partly impermeable kidney filter. The quantity and quality of the daily urine output must be carefully studied, and attempts at flushing the kidneys postponed, until the mechanical obstacles to the flow of urine are removed. After the third week, Nammack usually allows crackers with butter, well-cooked rice, calves-foot jelly, and broth, and other solid foods when the evening temperature reaches normal. Of twenty-eight patients treated according to this plan, twenty-seven recovered; one died from ulcerative endocarditis; three patients recovered after severe intestinal hemorrhages, and in one small boy perforating appendicitis developed in the fourth week, but he recovered, after operation, performed within four hours after the onset of the appendicitis.

21. **American Relapsing Fever.**—This case occurred in the Panama Canal Zone and was typical in every respect.

Lancet-Clinic, Cincinnati

January 28

25 Recent Researches in Mental Medicine, Especially in the Etiology and Treatment of Dementia Præcox and General Paralysis. L. V. Briggs, Boston.
26 Differential Diagnosis of Cerebellar Tumors. D. I. Wolfstein, Cincinnati.
27 Salvarsan. A. O. Zwick, Cincinnati.

February 4

28 Clinical Statistics. I. S. Wile, New York.
29 A Simplified Method for Intravenous Administration of Salvarsan. M. L. Heidingsfeld, Cincinnati.
30 *A Satisfactory Method of Suprapubic Drainage of the Bladder. F. E. Fee, Cincinnati.

30. **Suprapubic Drainage of the Bladder.**—The apparatus used by Fee consists of a 1 or 2-gallon bottle and a 1-quart bottle, equipped in the following manner: The large bottle is to be filled with water, and must have two openings, one at the ordinary neck and one at the bottom, both closed with rubber stoppers, each containing a perforation for a small tube. The lower tube is connected with a short drainage tube, passing below to a waste jar, and on this tube near the bottle is placed a small screw clamp to regulate the outflow drop. Two inches below this is placed a glass bulb dropper of the same variety as used in the Murphy proctoclysis apparatus. This bulb conveniently shows the rapidity of the outflow drop. From the neck of the bottle a small drainage tube is connected with a 1-quart bottle, the neck of which is closed with a rubber stopper containing two openings, one of which is connected with the large bottle, and the second opening is connected directly with a tube leading to the patient. The tube should have two short observation glasses inserted, one near the bottle and the other near the patient. Fee prefers to have a large drainage tube, ½ inch in diameter, inserted into the bladder, and through this a No. 10 catheter is passed, directly connected with the drainage apparatus. The lower end of the large drainage tube should have several holes cut in its side to facilitate the passage of urine into it. The tube passing into the quart bottle should only extend down about 2 inches. The one passing to the large bottle should extend into the neck about 1 inch. This permits the urine to drop into a small bottle and not be aspirated into a larger one. If this apparatus is to work satisfactorily, the catheter and tubes should be cleansed as often as necessary, depending on the condition of the urine; and, should it be thick and flow slowly, frequent cleansing is necessary. When all the connections are properly made, and little or no air is allowed to enter the tubes, the discharge drop need not exceed 150 drops per minute, and the large bottle need not be filled with water but twice in twenty-four hours. Fee says that with the exception of a slight wetting of the dressings, caused by the presence of the gauze drainage, for the first two or three days, this apparatus will satisfactorily drain practically all the urine from the bladder and deposit it in the small bottle, from which it can be drawn every twelve hours, measured and examined.

Journal of the Indiana State Medical Association, Fort Wayne

January

31 Revolutionary Methods in Connection with Syphilis. F. R. Charlton, Indianapolis.
32 The Surgical Year. M. F. Porter, Fort Wayne.
33 The Year's Progress in Pediatrics. L. P. Drayer, Fort Wayne.
34 Advances in Bacteriology and Pathology During 1910. B. W. Rhamy, Fort Wayne.
35 The Year's Progress in Medicine. T. Potter, Indianapolis.
36 The Year's Work of the State Board of Health. J. N. Hurty, Indianapolis.

Journal of the American Public Health Association, Columbus, Ohio

January

37 *Work and Play. C. O. Probst, Columbus, Ohio.
38 Interrelation of National Organizations Working in the Interest of Health. F. Almy, Buffalo, N. Y.
39 The Proper Correlation of Physicians, Engineers and Other Specialists in Public Health Work. W. T. Sedgwick, Boston.
40 Value of Terminal Disinfection. C. V. Chapin, Providence, R. I.
41 Importance of Birth Registration to Determine Infant Mortality. J. H. M. Knox, Baltimore.
42 Past Performances of the Laboratory Section with Some Suggestions for the Future. W. R. Stokes, Baltimore.
43 *Effect of Vacuum Desiccation on the Virus of Rabies, with Remarks on a New Method. D. L. Harris and L. F. Shackell, St. Louis.
44 *Carbo-Gasoline Method for Disinfection of Books. W. L. Beebe, Saint Cloud, Minn.

37. Abstracted in THE JOURNAL, Sept. 17, 1910, p. 1044.

43. **Effect of Vacuum Desiccation on the Virus of Rabies.**—The authors found that by using Shackell's method of desiccation, the essential feature of which is that the material is kept solidly frozen during the process of drying, brains and cords may be desiccated *in toto* without destruction of virulence. The time required for the complete extraction of water is from twenty-four to thirty-six hours. A number of brains have been so treated and the infectivity of all has been preserved. After the completion of desiccation, these brains were placed in an ordinary desiccating jar over sulphuric acid and left continually exposed to light at the ordinary room temperature. One brain has remained infective for four months. The only precaution taken was to guard against moisture. Material thus dried is like chalk and is easily pulverized. It is, however, very hygroscopic and, after a few hours' exposure to the air, becomes leathery and rapidly loses its infectivity.

44. **Carbo-Gasoline Method for the Disinfection of Books.**—The difficulties that prevent the disinfection of books seem to be numerous. If a gaseous disinfectant is used, it is very hard to have it penetrate all parts. Steam injures the book to some extent. An ideal method, therefore, would seem to be to use a liquid that would not be injurious and still kill all the pathogenic organisms that frequently infect them. Beebe found that gasoline does not injure books even after they are soaked in it for two or three hours if they are quickly dried. Gasoline has the advantage of dissolving fats and oils and, theoretically, it would appear that if a germicide were added it would act on bacteria in a dry and perhaps a wet medium. Several disinfectants which were soluble in gasoline were tried, but phenol was the only one that seemed to be efficient. In testing the efficiency of carbo-gasoline it was necessary to devise a special technic. A very volatile gasoline, which is termed 88 Baume or gas machine gasoline, was used. Liquefied phenol crystals were added to the gasoline in different amounts, and the disinfecting properties tested on several organisms. A 1 per cent. solution was sufficient to kill all non-spore producing organisms in less than five minutes. Some books were disinfected by this method after first infect-

ing them with several different organisms. In all cases 88 Baume gasoline, containing 2 per cent. phenol, was used. The books were opened at the pages where they were to be infected, put in the autoclave and sterilized at 15 lbs. steam pressure for fifteen minutes. They were then infected with *B. typhosus, B. coli communis* and *B. diphtheriæ*. They were left in carbo-gasoline for twenty minutes. One of the books was dried over night in a sterile chamber before cultures were made. In all, sixty-two inoculations were made, eighteen with *B. diphtheriæ*, nineteen with *B. typhosus*, eighteen with *B. coli communis* and seven with *Staphylococcus pyogenes aureus*, without growth in any case. Books that were treated by this method were not injured, unless the cover was lettered with an oil paint. In such cases, if care be taken not to touch the letters before the books are dried, no harm is done. This method has been tried on several different bindings, such as leather, cloth and paper, and in no case has the binding been affected. Gasoline of a lower specific gravity than 88 Baume can be used, but it takes longer for the gasoline to evaporate. If the odor of phenol and gasoline is offensive, oil of peppermint, wintergreen or cinnamon can be used as a deodorant. Beebe has found oil of peppermint, 3 parts; oil of wintergreen, 1 part, and oil of cinnamon, 1 part, efficient in disguising the odor of phenol.

Journal of the Kansas Medical Society, Kansas City

January

45 Pollution of Kansas Streams. J. L. Everhardy, Leavenworth.
46 Stricture of the Urethra. S. G. Zinke, Leavenworth.
47 Obstructed Nasal Respiration and Drainage. H. L. Alkire, Topeka.
48 Catarrhal Pneumonia. W. G. Norman, Cherryvale.
49 The Medical School of the University of Kansas. M. T. Sudler, Lawrence.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

December

50 Tetanic Convulsions in Frogs Produced by Acid Fuchsin, and Their Relation to the Problem of Inhibition in the Central Nervous System. H. G. Barbour and J. J. Abel, Baltimore.
51 Toxicity of Martius Yellow and Some Other Anilin Dyes and the Entrance of Dyes into Cells. A. P. Mathews and E. Longfellow, Chicago.
52 *Physiologic Studies in Anaphylaxis: Reaction of Smooth Muscle from Guinea-Pigs Rendered Tolerant to Large Doses of Serum. W. H. Schultz, Washington, D. C.
53 *Action of Ether on Anaerobic Tissue. A. P. Mathews, Chicago.
54 Pharmacologic Studies on the Phosphatids. Methods for the Study of Their Combinations with Drugs and Other Substances. W. Koch, Chicago.
55 Relation of the Phosphatids to the Sodium and Potassium of the Neuron. W. Koch and F. H. Pike, Chicago.
56 *Relation of the Phosphatids to Overton and Meyer's Theory of Narcosis. W. Koch and F. C. McLean, Chicago.
57 Relation of Brain Phosphatids to Tissue Metabolites. W. Koch and A. W. Williams, Chicago.
58 Function of the Brain Phosphatids in the Physiologic Action of Strychnin. W. Koch and H. T. Mostrom, Chicago.

52. Physiologic Studies of Anaphylaxis.—Schultz found that single intravenous or intraperitoneal injections of horse serum seem to have no effect on the normal irritability of intestinal muscle toward the same serum provided the muscle be tested within a period of one or two hours after the injection. If, after the first injection of foreign serum, a long enough interval elapse, intestinal muscle shows a supranormal degree of irritability toward the same serum. The time necessary to acquire this increased irritability is probably coincident with that required for the process known as sensitization in anaphylactic animals. Guinea-pigs may be rendered tolerant to large doses of foreign serum by injecting increasingly large doses of it, at intervals of two days, for a period of twenty to thirty days. The gross body reflexes and the cardiac and respiratory reactions differ markedly from those of a sensitized animal, but intestinal smooth muscle continues to show a supranormal irritability toward a serum similar to that of smooth muscle from a sensitized animal. The tolerance induced by repeated injections of foreign serum resembles tolerance acquired toward certain chemical substances familiar to pharmacologists. As to immunity, it seems impossible by repeated injections to initiate a condition of absolute immunity, since certain tissues not only remain irritable to the serum but acquire a supranormal irritability to it.

53. Action of Ether on Anaerobic Animal Tissue.—Mathews tested the action of ether on the nerve cord of the heart of the king crab, *Limulus*. The experiments consisted in separating the nerve cord from the posterior part of the heart, leaving it attached only to the front segment of the long, tubular heart. The hydrogen was generated by pure zinc and sulphuric acid and the gas was well washed in alkalin and acid permanganate, sodium hydrate and water. The replacement of air by hydrogen generally stimulated slightly both the rate and amplitude of the contractions. The contractions slowly diminished in the course of an hour in hydrogen from a rate of seventeen to a rate of about ten a minute. If air was then readmitted the rate usually fell still lower. Substitution of the ether-hydrogen mixture for hydrogen caused a short preliminary increase in the rate and amplitude of the contractions and increase in the tone of the heart-segment, provided the ganglion was in good condition and had not previously been anesthetized. This preliminary stimulation did not occur, or lasted only for two or three beats if the ganglion had been anesthetized once or twice before. Further action of the ether in all cases caused a cessation of contractions. When the ether was washed out with a stream of hydrogen, the ganglion was markedly stimulated on recovery. The ganglion generally recovered fully in the hydrogen. The recovery in the hydrogen was in most cases as prompt and complete as it apparently would have been in air; in a few cases, however, after being first for a considerable period in the hydrogen, the recovery from ether was very slow in the hydrogen, but rapid on changing the air. These results show, therefore, that the actions of ether on this facultative anaerobic tissue, while undergoing anaerobic respiration, is in all respects essentially the same as the action of ether on other aerobic nervous tissues, and as the action of ether on the same tissue in the presence of air, i. e., primary stimulation, followed by inhibition and after-stimulation on recovery.

56. Relation of the Phosphatids to Narcosis.—Koch and McLean doubt that there is any evidence that anesthetics or hypnotics produce changes in the state of aggregation of lecithin or kephalin, which are sufficiently consistent to account for such a general phenomenon as narcosis. They found some evidence, however, that chloroform as distinguished from pure ether has the power to form a combination with lecithin, a phenomenon which may be brought into relation with its slow elimination and consequent tendency to produce delayed poisoning.

Journal of the Oklahoma State Medical Association, Muskogee

January

59 *Prevention and Treatment of Septic Infections of the Extremities. E. H. Ochsner, Chicago.
60 Obstetric Surgery and Secondary Repair of Lacerated Perineum. J. M. Trigg, Shawnee.
61 Ophthalmia Neonatorum. M. K. Thompson, Muskogee.
62 Cases of Bronchopneumonia and One of Burn from Molten Lead Among the Dependent Children of Oklahoma. C. Puckett, Pryor.
63 The Modern Trend of Obstetrics. A. B. Leeds, Chickasha.
64 Bronchopneumonia. L. S. Willour, Atoka.

59. Abstracted in THE JOURNAL, Nov. 5, 1910, p. 1678.

Journal of Nervous and Mental Diseases, Lancaster, Pa.

January

65 Predementia Præcox: The Hereditary and Constitutional Features of the Dementia Præcox Make-Up. S. E. Jelliffe, New York.
66 *Disturbance of Sensation in a Case of Syringomyelia. A. R. Allen, Philadelphia.

66. Disturbance of Sensation in Syringomyelia.—In the case cited by Allen, the pathologic process completely isolated the posterior columns from the rest of the spinal cord from the first cervical to the eleventh thoracic segments, inclusive. There was perfect preservation of tactile sensibility and loss of pain and temperature sensibility. There was very diagrammatically demonstrated the lower limit of the trigeminal area. The cavity formation in the gliomatous tissue was most marked on the right side. Allen says that the case demonstrates the following facts: (1) The pathway for tactile sensations lies in the posterior columns; (2) with total cutting off of all the afferent pathways of the spinal cord with the exception of the posterior columns tactile sensation is not in the least impaired; (3) the validity of Mann's hypothesis is not questioned by the findings of this case.

XUM

Journal of the Tennessee State Medical Association, Nashville

January

67 Lumbar Puncture; Its Technic, Indications and Therapeutic Uses. J. Overton, Nashville.
68 Tuberculin Treatment in Pulmonary Tuberculosis. W. Litterer, Nashville.
69 Failure to Report Communicable Disease a Criminal Disregard of Law. N. F. Raines, Raines.
70 Present Status of Electrotherapy. M. R. Farrar, Nashville.

Journal of Medical Research, Boston

January

71 *Immunity in Tuberculosis. G. B. Webb and W. W. Williams, Colorado Springs, Colo.
72 *Examination of the Feces of Forty Cattle for Tubercle Bacilli and Conclusions Therefrom. J. Reichel and E. S. Deubler, Philadelphia.
73 *The Volume Index of the Red Corpuscles. R. C. Larrabee, Boston.
74 *A Case of Osteitis Deformans. A. G. Ellis, Philadelphia.
75 *Experimental Chronic Nephritis with Exophthalmos in the Rabbit. O. W. H. Mitchell, Columbia, Mo.
76 *Histology of the So-Called Hypernephromata and the Embryology of the Nephridial and Adrenal Tissues. L. B. Wilson and B. C. Willis, Rochester, Minn.
77 *Erythrocytic Nuclei of Normal Human Blood. R. W. King, Las Animas, Colo.
78 Primary Tumor of Lymph Vessels and Typical Lymph-Adenoid Tissue. O. W. H. Mitchell, Columbia, Mo.
79 *Investigations on Pulmonary Tuberculosis. A. H. Caulfield, Gravenhurst, Canada.
80 *The Swamp Fever of Horses. J. L. Todd, Montreal, and S. B. Wolbach, Boston.

71. **Immunity in Tuberculosis.**—Webb and Williams report on an animal which was inoculated weekly for nine months with a tubercle culture, from which 150 bacilli had been found to infect a guinea-pig. The inoculations were all made subcutaneously around the region of the navel. Autopsy failed to show any evidence of tuberculosis. The authors believe, therefore, that it may safely be considered that a guinea-pig has received, without the production of tuberculosis, about 1,000 times a lethal quantity of living virulent tubercle bacilli.

72. **Examination of Cattle for Tubercle Bacilli.**—The microscopic examination of the feces or rectal scrapings of cattle for tubercle bacilli was found by Reichel and Deubler to be of no value in that many bacteria make their appearance in the feces or rectal scrapings with the morphology and staining characteristics of tubercle bacilli, which, however, fail to prove themselves as such. Of the forty cattle included in the examination, nine (22.5 per cent.) were found to be throwing off virulent tubercle bacilli in the feces or rectal scrapings. Of these nine cattle, the tubercle bacilli were found virulent for guinea-pigs, and in eight of the nine the tubercle bacilli were virulent for rabbits. The authors believe that the successful demonstration of tubercle bacilli in the feces or rectal scrapings of cattle is either proof that extensive or "open" lesions of tuberculosis exist, or an indication that tubercle bacilli ingested are passing through the length of the alimentary canal of the animal under examination. Cattle, with "open" lesions of tuberculosis, and throwing off tubercle bacilli in the feces or rectal scrapings, as a rule show physical symptoms of the disease. Cattle showing physical symptoms of tuberculosis are the most active disseminators of the disease, because of the probable existence of "open" lesions, and the likelihood that tubercle bacilli are thrown off in the excreta. Since they show physical symptoms they may be detected in a herd by a consideration of the history, careful observation and a thorough examination of each animal. Tuberculin-reacting cattle do not necessarily throw off tubercle bacilli in the feces until the development of "open" lesions of tuberculosis, in which event the condition may be detected by a consideration of the history, careful observation and a complete physical examination.

73. **Volume Index of Red Corpuscles.**—Larrabee believes that the method of estimating the volume index by spontaneous sedimentation, while perhaps less accurate than the centrifugal method, is good enough for clinical uses. Normally, the corpuscles settle to about 50 per cent. of their total volume, where their number per cubic millimeter is 5,000,000. A volume index from 0.9 to 1.10 may be considered normal. Healthy persons occasionally show considerable variations beyond these limits. Concentration does not of itself affect the volume index. In pernicious anemia the volume index is almost invariably raised. The serum often has a distinct yellow color. The high index is probably also to be expected in those cases in which the pernicious picture is associated with other diseases, that is, when pernicious anemia occurs secondarily. In secondary anemia the volume index is almost always normal or lower than normal. After a severe hemorrhage, however, the volume index and the color index may be high and the blood may resemble pernicious anemia in other respects. One patient with aplastic anemia examined by Larrabee showed a low volume index. In a case of splenectomy for trauma the index was normal. In leukemia the volume index can seldom be estimated by this method. In splenic anemia the volume index was generally low. It was below normal in one case of Hodgkin's disease and high in one of malignant lymphoma.

74. **Osteitis Deformans.**—The case cited by Higbee and Ellis presented essentially all the features of the disease described by Paget, the most common manifestations of the affection being pronounced. The patient died and a careful and thorough postmortem examination was made, both macroscopic and microscopic. The findings were typical of the disease.

75. **Experimental Chronic Nephritis.**—The method used by Mitchell was very similar to that of Ophüls. Two per cent. potassium bichromate was injected subcutaneously. The amount used was started at 1 c.c. weekly, but was gradually increased in order to overcome the recuperative power mentioned by Ophüls. In one rabbit, 1/50 grain of atropin was administered simultaneously with the potassium bichromate. There was in a rabbit, injected only twice, a very marked parenchymatous nephritis with little or no indications of interstitial change. When the injections were continued several months, the predominating lesion was an interstitial nephritis. There is no evidence to show that this was produced at the same time as the parenchymatous lesion or following it. The feature noted especially in these experiments was the exophthalmos in one rabbit, which, to Mitchell's knowledge, has not been noted in experimental chronic nephritis or other conditions produced by chronic systemic intoxication. That the exophthalmos did depend on such an intoxication is, he thinks, the most probable explanation. There was no appreciable effect from the atropin used in one rabbit.

76. **Histology of Hypernephromata.**—Wilson and Willis studied fifty-four renal tumors, forty-eight of which were so-called hypernephromata; twenty-six swine embryos (serial sections), 5 to 20 millimeters; forty-three human embryos (serial sections), 6 to 70 millimeters. They concluded that most, if not all, so-called adrenal rests are probably of Wolffian origin. There is almost no evidence, embryologic or histologic, in support of Grawitz's hypothesis that the so-called hypernephromata have their origin in adrenal rests. There is much evidence that the so-called hypernephromata do not arise from proliferations of the adult secreting epithelium of the convoluted tubules. There is much evidence that the hypernephromata do arise from islands of nephrogenic tissue. Such tissue is sometimes present in the adult kidney and appears capable of forming tumors of the non-infiltrating, mixed-cordon, tubular, papilliform, and sarcoma type so characteristic of the so-called hypernephromata.

77. **Erythrocytic Nuclei of Normal Human Blood.**—King believes that he has been able to demonstrate conclusively that practically every red blood-cell in the blood of normal adults contains stainable remnants of a nucleus, and that the red blood-cells are derived from the bone marrow erythroblasts by a process of physiologic nuclear degeneration, accompanied, of course, by other changes. That the basic staining material which can be shown to exist in the central portion of practically every erythrocyte is nuclear material, King sees no reason to doubt. He feels almost confident that in a single preparation he has seen as many as ten ruptured red blood-cells, from each of which from two to six blood-platelets were emerging. He says he can hardly escape the conclusion that the blood platelets are simply the extruded fragments of the erythrocytic nuclei. The method by which he has been able to demonstrate the nucleation of the red blood-cells is simple and easily carried out. A solution of poly-

chromatic methylen blue is essential, also a saturated solution of picric acid in distilled water. This solution should contain an excess of the picric acid. In addition to these, a 1 per cent. aqueous solution of eosin, and a modified Romanowsky staining fluid will be needed. The blood films should be made on perfectly clean slides in the usual way. They must be neither too thick nor too thin. A little experience will be required before the best results can be obtained. The film should be immediately fixed for two or three minutes in methyl alcohol, and the following steps taken: (1) Rinse in tap water; (2) place for ten minutes in the blue solution; (3) rinse in water; (4) place for ten minutes in the picric-acid solution; (5) rinse in water; (6) place in 1 per cent. eosin solution for from one-half minute to two minutes; (7) rinse in water, and blot perfectly dry; (8) stain for five minutes with King's modified Romanowsky staining fluid; (9) rinse in water; dry, and examine with oil immersion.

79. **Investigations of Pulmonary Tuberculosis.**—The investigations made by Caulfield and others embrace: Variations in the type of v. Pirquet tuberculin reaction; deflection of complement test; procedures outlining possible classifications based on demonstrable serum reactions, and opsonic and phagocytic estimations. Two hundred patients were studied. Briefly, the data obtained from the procedures reported have given a means of grouping certain of the otherwise more or less indefinite clinical conceptions afforded by any study on a number of cases of pulmonary tuberculosis. Until certain of the reactions are proved specific Caulfield thinks it is doubtful whether the different end-results do or do not represent specific conditions between the host and the tubercle bacillus. Regarding the results in the light of clinical work and not from the standpoint of specificity the various data have aided definite conception on three considerations of tuberculous infection: (1) the existing relation between the infecting tubercle and host, as evidenced by (2) the amount of anatomic involvement and (3) the resulting clinical responses. The temporary prognostic values apparently afforded by the interpretation of the type of tuberculin reaction, of antigen-serum reaction, and of the phagocytic behavior of the patient, have been followed chiefly under the favorable circumstances of sanatorium life where most patients exhibit their best powers of resistance. In obtaining these results, observations were made which suggest that the biologic classification might change with clinical variation. Especially was this so with regard to the reactions obtained with various strengths of antigen and patient's serum. Here conception and expression are facilitated by regarding the possibility of two serum contents or reaction capacities. (1) Inhibition.—Serums with this effect allow hemolyses on the addition of "system" because of their serum-antigen resultants which are repellant or non-attractive to complement. (2) Tuberculous sensitizers:—Serums with these specific bodies cause true fixation of complement, shown as complete absence of hemolysis.

80. **The Swamp Fever of Horses.**—Swamp fever is a disease of horses which is widely distributed in the Western United States and in Western Canada. It is usually a chronic disease and is characterized by emaciation, weakness, irregular temperature and anemia. It is caused by an infecting agent which can be transmitted from horse to horse by the inoculation of blood taken from an infected animal. All search for a parasite by Todd and Wolbach, which might cause the disease, has been unsuccessful, although large numbers of preparations of body fluids and tissues have been examined at all stages of the disease by microscopic and bacteriologic methods.

New Mexico Medical Journal, Las Cruces

January

81 One Year's Progress in Our Knowledge of Tuberculosis. F. T. B. Fest, Las Vegas.
82 Education of the Tuberculous Individual in Home Care. E. F. Frisbee.

Bulletin of the Manila Medical Society

December

83 Leprosy. M. T. Clegg, Honolulu, H. T.
84 Polycythemia. C. B. Snyder, U. S. Army.
85 Priority in the Demonstration of Negri Bodies in the Philippines. W. P. Chamberlain, U. S. Army.
86 Community Measures Against Mosquitoes. C. S. Banks, Manila.

Canadian Medical Association Journal, Toronto

January

87 The Ancient Foundations of Heredity. A. B. Macallum.
88 *Renal Activity. T. G. Brodie.
89 *Rheumatism and So-Called Chronic Rheumatism. T. McCrae.
90 Association of Malignant Disease of the Thyroid and Multiple Lipomata. J. R. Goodall and L. C. Conn.
91 Salvarsan in Syphilis. J. G. Fitzgerald.
92 *Early Diagnosis of Pulmonary Tuberculosis. J. J. Thomson.
93 Roentgen-Rays with Bismuth Test Meal in Diagnosis of Gastric Conditions. F. A. C. Scrimger.

88. **Renal Activity.**—Brodie's view is that the glomerulus is, in reality, a means by which there may be set up at the commencement of the tubule a pressure-head sufficient in magnitude to drive the fluid down the tubule. The renal tubule is a long structure possessing an extremely narrow lumen. If, then, we apply Poisseuille's law governing the flow of fluid along capillary tubes to the kidney tubule, we at once see that a considerable pressure is required to drive even a small volume of fluid along such a tubule. It is a well-established fact that the watery part of the urine arises mainly, even under certain circumstances, entirely at the glomerular surface, and this fluid is discharged down the tubule. If we could measure the length of the tubule, the diameter of its lumen in its various sections, and then determine the volume of urine flowing along the tubule in a given time, we could, assuming that Poisseuille's law holds for the tubule, determine how great a pressure is required to maintain such a flow. To test the view, Brodie made some experiments of the following type: A vigorous diuresis was set up in an anesthetized dog by the injection of a warm, saline solution. The rate at which the urine was discharged from one kidney at the height of this diuresis was then determined, and immediately the renal vessels and ureter were ligatured and the intact organ which thus contained, as far as possible, the whole of its blood and urine at the instant of ligature, was fixed in formalin. After hardening, it was cut into portions, the medulla separated from the cortex, and pieces of the cortex weighed, embedded, and cut into sections. These were mounted in series, and then the total number of conglomeri in the whole kidney was calculated from the ratio of the weight of the whole cortex to that of the small piece examined.

The lumen of the tubule in its various parts was next measured. Taking one experiment as typical, Brodie found that a pressure of as much as 93 mm. of mercury was required to drive the fluid along one of the tubules at the rate observed during the experiment. The question at once arises: Whence is this pressure-head derived? There are only two possible sources: (1) a secretory pressure set up by the cells in some part of the tubule, presumably at the glomerulus, since the secretion of water is effected there, or (2) a direct pressure transmitted through the glomerular surface from the blood-pressure. All attempts made to ascertain whether any of the cells of the renal tubule can set up a secretory pressure analogous to that observed in the case of the submaxillary gland, have completely failed. The maximum pressure at which urine can be discharged from the kidney is always from 30 to 40 mm. Hg less than the arterial blood-pressure. Hence, Brodie's suggestion is that the pressure-head is derived from the capillary blood-pressure within the glomerulus, that pressure being transmitted in undiminished amount through the glomerular capillary wall and epithelium. To express this view of the hydrodynamic action of the glomerulus, he terms the glomerulus a "propulsor."

89. **Chronic Rheumatism.**—The whole argument made by McCrae is that there is no entity which we can properly term "chronic rheumatism," and he tries to point out the reasons for doing away with one of the names which is so often treated. He says that the public often reproaches physicians for the inability of the profession to cure "chronic rheumatism." Is it any wonder, he asks, when in so many instances the actual condition is not properly diagnosed but is given a name which does not have any reference to it, and to this the treatment is directed; witness the patient with popliteal aneurysm, on whom much good medicine has been wasted. We can still echo the hundred year old sentiment of Haygarth that a number of conditions are grouped together as rheumatism, which have no other feature in common than the occurrence of pain.

XUM

92. **Diagnosis of Tuberculosis.**—Thomson emphasizes (1) the lymphatic nature of the disease in its primary state; (2) the predisposition of the paravertebral cranial parts of the lung; (3) the rarity of single lesions in the lower lobes or bases of the lungs; and (4) the importance of percussion. He also notes the value of the v. Pirquet test in all questionable cases. He regards it as an undoubted advance over the uncomfortable subcutaneous injection with its accompanying fever.

Old Dominion Journal of Medicine and Surgery, Richmond, Va.

January

94 Edward Jenner, M.D., LL.D., F.R.S. G. W. Cook, Washington, D. C.
95 Physiologic Action of Certain Electrical Currents. C. M. Hazen, Richmond.
96 Fibroids of the Uterus, Complicated by Pregnancy. E. T. Hargrave, Norfolk, Va.
97 Three Unusual Cases in Radiographic Work. D. D. Talley, Richmond.

Cleveland Medical Journal

January

98 *Phylogenetic Association and Certain Medical Problems. G. W. Crile, H. G. Sloan and J. B. Austin, Cleveland.
99 Tabes Dorsalis and the Result of Specific Treatment. F. Billings, Chicago.
100 Fibrous Nasal Polypi. D. A. Prendergast and W. J. Abbott, Cleveland.

98. **Phylogenetic Association.**—It is the purpose of the authors to offer evidence that, underlying medicine, there are certain great natural laws which show that disease as well as health is a part of the web of life; that every phenomenon of disease fits precisely into a general plan, and that like a difficult picture puzzle if we persist we can make up the completed picture of disease. The experimental work and the laboratory findings are described fully, but the length of the article and the limited space in these columns, unfortunately prohibits abstracting this paper.

Detroit Medical Journal

January

101 Phosphatic Index as a Means of Diagnosis and an Aid in Treatment. J. H. Dowd, Buffalo, N. Y.
102 Surgical Aspect of Goiter with Special Reference to Pressure Symptoms. A. W. Blain, Detroit.
103 An Improved Method for Preparation of Bacterial Vaccines. C. M. Stafford, Detroit.

Woman's Medical Journal, Cincinnati

January

104 Fever in the Puerperium. A. W. Tallant, Philadelphia.
105 Suboxidation a Factor in the Cause of Disease. M. E. Dickinson, Rochester, N. Y.
106 The Metranoikter in Dysmenorrhea. C. MacFarlane, Philadelphia.
107 *A Successful Case of Cartilage Transplantation for Prevention of Perforation in Submucous Resection. I. D. Kerr, Boston.

107. **Cartilage Transplantation for Prevention of Perforation in Submucous Resection.**—In Kerr's case there was a marked cartilaginous deviation to the right with a corresponding large basal spur. There was considerable crusting and secretion in the nares. The mucous membranes bled easily, and on both sides of the septum a small white area of cartilage denuded of its mucous membrane was seen. It seemed to the author that if she did a submucous resection these traumatic perforations in the mucous membranes, together with the incision on one side anteriorly, although apparently not directly opposite when the deviated cartilage had been removed and the subsequent shrinking of the mucous membrane had taken place, that a perforation would result. To prevent this, it occurred to her that she might try transplanting a piece of cartilage between the perforations. With this thought in mind, she removed only enough cartilage with the Ballenger knife to allow space to remove the basal spur. That done, she removed the anterior half of the deviated cartilage above, and found a sufficiently straight and large enough remaining piece of cartilage to transplant, and this she allowed to remain in position until she had completed the operation. She then transplanted this piece of cartilage, which was about three-quarters of an inch in length and about one-half inch in width, bringing it as far forward as the incision. The flaps of the incision were brought carefully into place and the nares packed for twenty-four hours. Three days after the operation granulations were seen springing in from the edges of the perforations of the mucous membranes. In ten days the granulations had completely filled in, and no cartilaginous areas could be seen. Seven months have now elapsed since the operation. There is no perforation, the mucous membrane presents a healthy condition, there has been no epistaxis, and the patient, a girl, has perfect breathing.

Long Island Medical Journal

January

108 Empyema of the Maxillary Antrum; Symptomatology, Pathology and Treatment. S. H. Lutz, Brooklyn, N. Y.
109 Suicide by Poison. C. D. Cleghorn, Mineola, N. Y.
110 Historical Sketch of St. Mary's Hospital of Brooklyn. J. Harrigan, Brooklyn, N. Y.
111 Historical Sketch of St. John's Long Island City Hospital. J. H. Barry, Long Island City, N. Y.

Virginia Medical Semi-Monthly, Richmond

January 27

112 Treatment of Some Forms of Cardiac Failure. L. F. Barker, Baltimore.
113 Acute Peritonitis. H. S. MacLean, Richmond.
114 Ileus. S. S. Gale, Roanoke.
115 Local Anesthetics in Anorectal Surgery. E. H. Terrell, Richmond.
116 The Status Lymphaticus; A Condition Found in Subjects Dying from General Anesthesia. C. P. Jones, Newport News.

Kentucky Medical Journal, Bowling Green

January 15

117 Indications for and Preliminaries to Nephrectomy. B. F. Zimmerman, Louisville.
118 Importance of Fetal Physical Diagnosis in Management of Shoulder Presentations. F. C. Wilson, Louisville.
119 Traumatic Hernia. O. E. Bloch, Louisville.
120 The Herz Sphygmomanometer. E. F. Horine, Louisville.
121 Suprapubic Lithotomy for Vesical Calculus Weighing 500 Grains. J. T. Dunn, Louisville.
122 Four Cases of Esophagoscopy. G. C. Hall, Louisville.
123 Enlarged Prostate of Traumatic Origin. G. H. Day, Louisville.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

January 21

1 A Lecture on Cardiac Arrhythmia. A. J. Jex-Blake.
2 *Theory and Practice in Treatment of Pulmonary Tuberculosis. W. C. Bosanquet.
3 *A Series of 1,000 Inoculations, Chiefly in Private Practice. H. W. Crowe.
4 *Typhoid Infection. J. A. Mills.
5 Myasthenia with Enlargement of the Thymus. J. O. Symes.
6 *Antihemolytic Action of Arsenic. J. A. Gunn and W. J. Feltham.

2. **Treatment of Pulmonary Tuberculosis.**—While there is nothing new in Bosanquet's paper his emphasis of the principles of the treatment of tuberculosis is worthy of repetition. He says that there is no specific remedy or universal mode of treatment for tuberculosis of the lungs. Neither tuberculin, nor rest, nor work, nor mountain air, nor a sea voyage, nor a sanatorium, is an infallible remedy to be administered to all, as we give quinin for malaria or mercury for syphilis. We must study the individual patient, his circumstances and his idiosyncrasies and, armed with this knowledge, try to raise his resistance to the bacillus and its poisons. Fortunately, the human organism has considerable powers of resistance, if it is not debilitated by adverse conditions; and though we must, above all, endeavor to recognize cases early, before the disease has advanced far, yet even in advanced cases there is always hope of arrest of the disease or at least of a temporary reprieve and prolongation of life.

3. **One Thousand Inoculations.**—The anterior surface of the thigh is the least painful, and in any patient who is at all needle-shy, Crowe always injects in this region, varying each time the exact locality. Other situations are into the extensor surface of the upper arm, the deltoid, or into the skin of the abdomen, but he has usually avoided the conventional site, namely, that of the intrascapular region, as the skin is so tough that it is extremely difficult to avoid hurting the patient. Sometimes he gives the injection deeply into the muscles, sometimes subcutaneously, but he does not believe

the result is affected. The vaccines he used have all been home-grown, with the exception of acne and tuberculin. Of thirty-two cases of staphylococcus infections, twenty-eight patients were cured. One case of pyemia terminated fatally; two patients with acne and one with suppurative eczema are still under treatment. Three of four cases of streptococcus infections yielded readily to the treatment. In one case of nasal catarrh, apparently caused by an extremely long streptococcus, no dose had any effect whatever. The case was a complete failure under treatment. Of six cases of infection due to *B. coli communis*, four patients recovered; one patient with nephritis and one with mucous colitis were not benefited. In seven cases of infections of the respiratory passages other than tuberculous, and caused by the pneumococcus, *M. catarrhalis*, bacillus of Friedländer, and the bacillus of influenza, the patients responded promptly. In a case of unresolved pneumonia, due to Friedländer's bacillus, the whole condition cleared up within forty-eight hours after the first inoculation, although the man had been in bed for a fortnight with high temperature, and extreme dyspnea on the slightest movement. Of thirty-six cases of tuberculosis (skin, one; kidney, two; peritoneum, three; glands, four; breast, one; bones, five; lungs, twenty;) seventeen patients were cured (lungs, seven; bones, breast and skin, one case of each; glands, four; peritoneum, three); five patients were benefited (bones, one; kidney, one; lungs, three); eight remained unaffected (kidney, one; bones, two; lungs, five).

4. **Typhoid Infection.**—Rats are suggested by Mills as being carriers of typhoid. It is in autumn, when the grain has been gathered and as winter approaches that rats and mice leave the fields and make for human habitations. One means by which they obtain entrance—as a matter of common observation—is by drain and sewage passages, especially if those be defective. (Rats themselves are apt to cause leakages and defects in improperly constructed sewers.) Granted the existence of people with actual typhoid, or of human typhoid bacillus-carriers whose excreta is among the sewage where the rats live, and which it is possible they devour, it is easy to see how millions of bacilli may be present on the body, feet, jaws and tails of these rodents, whereby food and drink may become directly as well as indirectly contaminated. In addition, typhoid bacilli may exist in the intestine of mice and rats, and their excreta in turn be a source of infection. An association with rats is traced by Mills in an asylum where the occurrence of typhoid could not be explained in any other way.

6. **Antihemolytic Action of Arsenic.**—Experiments made by Gunn and Feltham with sodium arsenite and sodium arsenate lead them to conclude that arsenic, whether in the form of sodium arsenite or sodium arsenate, exerts on the red blood-corpuscles an action antagonistic to that of certain hemolytic agents. The experiments, therefore, afford additional proof in favor of the view that a protective action on the formed red blood-corpuscles against normal or abnormal hemolytic processes may, in part at least, account for the as yet imperfectly explained benefit which results from the medicinal administration of arsenic in blood-diseases.

Lancet, London

January 21

7 Points in Diagnosis of Orbital Disease. J. S. Hosford.
8 Transverse Fractures of the Patella, Without Separation of the Fragments. A. E. Johnson.
9 *Congenital Pulmonary Stenosis, with Special Consideration of the Nature of the Secondary Blood Changes. E. P. Weber and G. Dorner.
10 Intravenous Method of Treatment of Syphilis with Salvarsan, with a Convenient Apparatus for Such Administration. H. W. Bayly.
11 *"Nodular" Fibromyositis, an Everyday Affection. W. H. M. Telling.
12 *Influence of Chloroform When Repeatedly Administered in Small Doses. G. H. Clark.

9. **Congenital Pulmonary Stenosis.**—The authors reaffirm their previous conclusion that the secondary polycythemia in cases of congenital heart disease is seldom, if ever, rivaled in degree by the secondary polycythemia which sometimes, as is well known, occurs in chronic acquired valvular affections (of the mitral valve) and in adherent pericardium. It is more nearly rivaled by the marked secondary polycythemia occasionally associated with late stages of pulmonary emphysema, chronic bronchitis, asthma, old bilateral pleuritic adhesion, chronic interstitial pneumonia, and pulmonary fibrosis. The polycythemia in all such cases differs from the polycythemia (possibly of primary myelogenous origin) associated with chronic splenomegaly, which has been termed "erythremia," by the not infrequent absence of real cyanosis in erythremia, especially in its early stages. Just as hypertrophy of the walls of the heart is useful in so far as it compensates for mechanical defects in the valvular apparatus, so also is polycythemia useful in so far as it compensates for difficulties in the proper oxygenation of the blood and tissues of the body; but just as in cardiac valvular disease great hypertrophy of the heart indicates some grave defect in the valvular mechanism, so also an extreme increase in the number of erythrocytes in the blood points to great impairment of the normal process of oxygenation of the body.

11. **"Nodular" Fibromyositis.**—It is maintained by Telling that chronic muscular rheumatism, or, to quote some of its synonyms, rheumatism, muscular and tendinous rheumatism, myalgia, muscular fibrositis, etc., is a pathologic condition, the essential morbid process of which is an inflammatory exudation into the fibrous tissues in almost any situation in which fibrous tissue is found. This exudate leads to swelling and thickening of very variable character and degree; it may be slight and impalpable; severe and definitely tumor-forming; acute and transient; chronic, and eventuating in hard fibrous lumps which resist all efforts at dispersal by the ordinary means at our disposal; but under all circumstances it tends to be painful. The one almost constant symptom which results from this fibrositis is pain. These infiltrations are painful when they are pressed on, and if vigorously rubbed they swell up and the pain is greatly increased. This local pain on pressure is practically the diagnostic feature of these cases. If a patient presents himself with any of the ordinary manifestations of chronic rheumatism, as a lumbago, sciatica, pleurodynia, or a cephalagia, and with any obscure myalgic or neuralgic pain in any part of the body, Telling urges that a careful investigation should be made of the fibromuscular tissues of the affected areas. In the more recent diffuse cases there is general tenderness of these tissues, and one may not be able to feel anything which one could definitely assert to be a palpable thickening. But more usually, either with or without such general tenderness, one will find areas which are definitely, often exquisitely, tender to touch. All that is needed is a careful digital exploration of the structures involved. General treatment meted out to a feverish attack, with the employment of the ordinary pain-relieving drugs, is generally sufficient to effect a cure. If the pain is at all localized a single thorough application of massage may result in cure in this early stage. The removal of any discoverable cause, such as gastrointestinal irregularities, must be undertaken, and will not only help toward a cure, but will tend to prevent recurrences. During the more acute exacerbations drugs such as sodium salicylate, and the various means described in the acute attack produce a certain measure of relief, but recurrence is liable to occur indefinitely. To obtain a permanent cure and a complete relief from the recurrent attacks it is absolutely necessary that local treatment should be adopted with a view to obtain a complete dispersal of the indurations. Counter-irritation by blistering or cautery produces relief. Nothing, perhaps, is so efficient as the rubbing in of oil of gaultheria. Mechanical treatment must be adopted to secure a permanent dispersal. The most important of the forms are massage and systematic exercises. Acupuncture is undoubtedly of great use in relieving pain, but in Telling's experience does not produce complete dispersal of the infiltrations. In cases of fibrous nodules which will not yield to simpler measures, and which by implicating or pressing on nerves cause persistent pain, excision is not only advisable but necessary, the only caution being that the nodule must be definitely localized beforehand.

12. **Influence of Chloroform in Small Doses.**—Clark found that chloroform repeatedly administered by the respiratory passages, subcutaneously, and by the stomach in small doses rapidly kills rabbits. The liver shows degeneration of the

cells sometimes so marked that the whole center of the lobule is broken down into débris. The cells in the center of the lobule are early affected, those further out later. Fat is always present, generally in large quantities. The kidney suffers to some extent, but relatively more when the chloroform is inhaled than when injected or given by the stomach. Fat is occasionally found in degenerated cells. The spleen shows intense congestion, the sinuses being packed with red blood-corpuscles. Along with the red corpuscles an orange-colored pigment is generally present which reacts to the stain for iron. A large number of very large phagocytes are present in most cases. The average weight of the spleen was 0.46 gram heavier than the controls when chloroform was inhaled, and 0.59 gram and 0.17 gram heavier when injected and when given by stomach respectively. Degenerative changes were observed in the cardiac muscle. Fat was not observed in any of the hearts examined.

Journal of Tropical Medicine and Hygiene, London

January 16

13 Possible Plurality of Species of the Trypanosomes Affecting Man in Africa. A. Castellani.
14 Trypanosome Diseases of Domestic Animals in Uganda. Sir D. Bruce, A. E. Hamerton, H. R. Bateman and F. P. Mackie.
15 The Human Trypanosome of Northern Rhodesia. L. E. W. Bevan.

Clinical Journal, London

January 11

16 Cancer of the Rectum. F. C. Wallis.
17 Acute and Chronic Inflammatory Lesions of Bone. G. E. Waugh.
18 The Acute Abdominal Case from the Standpoint of a Country General Practitioner. F. W. Langridge.

January 18

19 Gait as an Aid to Diagnosis. H. H. Tooth.
20 Cancer of the Rectum. F. C. Wallis.
21 Value of Electricity in Treatment of Some Abdominal Diseases. H. Manders.

Medical Press and Circular, London

January 11

22 The Help of Roentgen-Rays in Diagnosis of Diseases of the Chest. A. H. Pirie.
23 Treatment of Suppurative Middle Ear and Mastoid Disease by Conservative Mastoid Operation. C. A. A. Dighton.
24 The Traumatic Neuroses. T. R. Glynn.

Archives des Maladies de l'App. Digestif, Paris

November, IV, No. 11, pp. 626-688

25 *Hemorrhagic Colitis. A. Mathieu.
26 *Syncopes in Chronic Colitis. (Les pertes de connaissance dans les réactions d'origine colique.) M. Millon and L. Marre.
27 Rapidly Fatal Case of Diabetes Mellitus with Minimal Lesions in the Pancreas. (Cas de diabète maigre.) M. Labbé, L. Lavastine and G. Vitry.
28 Serodiagnosis of Echinococcus Disease of the Liver. A. Bauer.

25. **Hemorrhagic Colitis.**—Mathieu summarizes the treatment for hemorrhage in the course of simple dysenteriform colitis as merely rest in bed, dieting, moist heat to the abdomen, lavage of the intestines and a mild purge after two or three days. The lavage should be done with an isotonic fluid at a temperature of 38 or 40 C., not injecting more than a liter at most and never with a pressure over from 20 to 40 centimeters. Done in this way, the bowel is cleansed and soothed, with no fear of exaggerating the tendency to spasm. In the severer cases he gives two injections a day of a 0.02 per cent. solution of silver nitrate, seldom exceeding a total of four or five such injections. In the chronic forms, local applications or operative measures may become necessary. The record of the latter as he reviews it is not very encouraging and the later history is not known of many of the patients cited as cured.

26. **Syncopes in Chronic Colitis.**—Millon and Marre have encountered cases of transient loss of consciousness in the course of an exacerbation of the intestinal trouble inducing symptoms of severe indigestion. In other cases the syncope, followed by a small diarrheic passage, is the only sign of trouble. The syncopes are brief and leave no traces, but the dread of them may become an obsession in time, and they might prove dangerous in persons inclined to arteriosclerosis or nephritis. Treatment should seek to soothe the nervous system as it is peculiarly irritable in these patients, besides treatment of the intestine. Four cases in adults are reported in detail. The oldest was a man of 67.

Annales des Maladies des Org. Génito-urinaires, Paris

December 1, XXVIII, No. 23, pp. 2115-2208

29 *Reflex Nervous Phenomena in Urinary Apparatus in Appendicitis. F. de Meo.

December 15, No. 24, pp. 2209-2304

30 *Myomatous Tumors in the Bladder. (Tumeurs musculaires lisses de la vessie.) J. Heitz-Boyer and Doré. Commenced in No. 22.
31 *Treatment of Kidney Disease by Nephrectomy. Pausson.

29. **Symptoms in Urinary Apparatus from Appendicitis.**—De Meo relates the particulars of six cases in Italian literature and two from his own experience in which reflex nervous phenomena, kidney colic, pain during micturition, bladder tenesmus, cystalgia, smarting in the urethra or priapism were the first signs of trouble which later proved to be appendicitis. The inflammation in the appendix evidently acted on the vesical, renal, hypogastric or pubic plexus, inducing functional disturbance. In his cases the urinary symptoms were explained by discovery of an abscess between bladder and rectum, evidently of appendicitic origin, although there was no history of appendicitis. Both patients were young men. In two of the cases from the literature these attacks of pain in the right inguinal region had been ascribed to rheumatism, the fourth simulated kidney colic with strangury. As no improvement followed a month of medical measures, the appendix was removed and all symptoms ceased. Acute retention of urine was also the predominant symptom in another case in which the lesion proved to be an encysted abscess in the pouch of Douglas, the appendicitis having run a latent course.

30. **Myomatous Tumors in the Bladder.**—Of the twenty-three patients given operative treatment, two died within a few days of peritonitis and one from unknown cause. The literature on the subject is reviewed in detail.

31. **Indications for Nephrectomy.**—Pausson concludes his review of the results of the functional tests as applied to determine the condition of the other kidney with the statement that none of them gives positive information. The confidence in the functional capacity of the remaining kidney cannot be more than presumptive at present. So many factors are involved that it is impossible to estimate them all with certainty.

Archives de Médecine des Enfants, Paris

December, XIII, No. 12, pp. 881-986

32 Inconvenience and Dangers of Milk from Cows Fed with Factory Waste. E. C. Aviragnet.
33 *Mucomembranous Colitis. A. Arraga.
34 After-Treatment of Congenital Dislocation of the Hip Joint Reduced by the Bloodless Method. (Luxations congénitales de la hanche.) P. V. Badin.
35 Case of Deforming Fibrous Osteitis with Osteomalacia. S. de Souza.

33. **Mucomembranous Colitis.**—Arraga says that this affection is extremely common in Argentina among children, and that his experience has demonstrated that it is a manifestation of an inherited arthritic tendency. This primary arthritic tendency he ascribes to overfeeding, especially with meat and eggs. Children born with this tendency manifest it early by green diarrhea alternating with constipation. The tendency to constipation and colitis may remain through life—the result of a functional insufficiency of the digestive organs, liver and ductless glands. Overfeeding with meat and eggs aggravates this congenital tendency. Women nursing such children should subsist largely on a milk-vegetable diet, he affirms, and weaning should be postponed as late as possible.

Lyon Médical, Lyons

December 11, CXV, No. 50, pp. 981-1024

36 *Treatment of Pulmonary Tuberculosis by Artificially Induced Pneumothorax. J. Courmont.
37 Prophylaxis of Communicable Disease in the Lyons Schools. C. Lesieur.

December 18, No. 51, pp. 1025-1080

38 Advantages of Appendicostomy: Two Cases of Intestinal Obstruction. G. Gayet.
39 Classification of School Children Who Cannot or Will Not Study. (Essai de classification des enfants paresseux.) E. Weigert.

36. **Artificially Induced Pneumothorax in Tuberculosis.**—Courmont reports benefit from immobilization of the lung in three patients out of his series of four thus treated. In the one unsuccessful case the tuberculous lesions were not

restricted to the lungs and larynx. The method is necessarily limited to cases in which only one lung is involved and the adhesions are not too pronounced. Even ulcerative processes in the larynx may heal when expectoration from the diseased lung stops—this point is instructively brought out in his case-reports. Lesions in the intestines do not seem to be influenced by the suppression of the sputum. In three other cases, the method was found inapplicable. The nitrogen was injected in amounts ranging from 500 to 1,300 c.c., a total of 9,800 c.c. being injected in the first case between April 13 and September 1, in eleven injections. The total was 12,950 c.c. in seventeen injections in the course of seven months in the second case. The third patient was so much improved by five injections in about six weeks that he considered himself cured and declined further treatment.

Presse Médicale, Paris

January 11, XIX, No. 3, pp. 17-24

40 *Myocarditis and Sudden Death in Scarlet Fever. E. Weill and G. Mouriquand.

40. **Fulminating Scarlet Fever.**—Weill and Mouriquand found intense lesions of acute myocarditis at necropsy on a young man who died suddenly on the fifth day of severe scarlet fever which had developed suddenly in the midst of apparent health. The heart findings indicated serious trouble from the first.

Revue de Gynécologie, Paris

December, XV, No. 6, pp. 513-632

41 External Male Pseudohermaphroditism; Suppurative Orchitis Simulating Appendicitis. G. Gayet and Jalifier.
42 *Fibromyomas of the Stomach; Two Cases. P. Peugniez and L. Jullien.

42. **Gastric Fibromyomas.**—Peugniez and Jullien report two cases; in both the operation was done on the assumption of cancer. Both patients have been apparently cured by excision. In some of the cases on record the tumor after a long benign phase seemed to enter on a period of rapid malignant growth.

Revue de Médecine, Paris

December, XXX, No. 12, pp. 937-1012

43 Mycosis Due to the *Oidium cutaneum*. (Oidiomycose gommeuse ulcéreuse disséminée. Mycose nouvelle.) de Beurmann, H. Gougerot and R. Vaucher.
44 Pathogenesis of Cancer. (Maladie et mutation.) M. Jankelevitch.
45 Lesions of the Pancreas in Infantile Gastro-Enteritis. M. Salomon and P. Halbron.
46 Hippocratic Finger with Cardiovascular Disease. (De l'hippocratisme.) J. Baur.

Semaine Médicale, Paris

January 18, XXXI, No. 3, pp. 25-37

47 *The Tourniquet Sign of Disease with Hemorrhagic Manifestations. (Le signe du lacet.) C. Frugoni and F. Giugni.

47. **The Tourniquet Sign of Hemorrhagic Disease.**—For more than four years Frugoni and Giugni have been studying the local phenomena which develop in an affection with a tendency to hemorrhagic manifestations when a slightly constricting band is applied to the limb above. The band is not drawn tight enough to induce actual arterial hyperemia, but merely enough to cause the veins to be a little more prominent, and any tendency to a hemorrhagic diathesis is then rendered locally evident. They relate their experiences with this test applied to patients with various hemorrhagic affections, comparing the findings with those of tests of the various properties of the blood. The trouble does not seem to be with the blood itself so much as in the walls of the vessels. In some of their patients a slight traumatism at one point was followed by hemorrhagic manifestations all over the body except the face, and no means could be devised to induce them in the face; evidently the vessel walls here are exceptionally stout.

Archiv für Kinderheilkunde, Stuttgart

LV, Nos. 1-2, pp. 1-160. Last indexed February 11, p. 462

48 Research on the Thymus and Its Importance in Pediatrics. H. Klose.
49 *Tuberculosis and Tuberculin Treatment in Infancy and Early Childhood. II. P. Rohmer.
50 Cutaneous Thrush in Infants. (Soormykose der Haut im frühen Säuglingsalter.) J. Ibrahim.
51 Toxic Eruption with Bronchiectasia. E. Ruediger.
52 *Idiosyncrasy of Infants to Cow's Milk. R. Halberstadt.
53 Calomel as a Diuretic. F. v. Szontagh.

49. **Tuberculin Treatment of Infants and Young Children.**—Rohmer reports the details of six cases in which Schlossmann's method of tuberculin treatment with comparatively large doses (0.0002 gm.) was applied. The outcome was unfavorable in every instance, although at first marked benefit seemed to be derived; the underlying tuberculosis however continued its course practically unmodified. The large doses of tuberculin seemed to exert an injurious influence on the organism as a whole, bone lesions developing in some of the children while in one the tuberculosis flared up in a fulminating form after an intercurrent attack of measles.

52. **Idiosyncrasy to Cows' Milk in Infants.**—Halberstadt reports six cases and is inclined to regard idiosyncrasy to cows' milk as a symptom of a congenital constitutional anomaly. It does not manifest itself during the first days of life but develops gradually, like pylorospasm, and seems to be somewhat in the nature of anaphylaxis. The different elements of the milk seem to be at fault in different cases but the constitutional unfitness is the primal cause.

Archiv für klinische Chirurgie, Berlin

XCIV, No. 1, pp. 1-201. Last indexed Dec. 31, 1910, p. 2312

54 Surgery of the Biliary Apparatus. (Beiträge zur Chirurgie des Choledochus und Hepaticus einschl. der Anastomosen zwischen Gallensystem und Intestinis.) W. Eichmeyer. Concluded.
55 Fracture of the Radius. H. Zuppinger.
56 Hernia of the Bladder. R. Felten.
57 Importance and Treatment of Congenital Bladder Diverticulum. B. N. Cholzoff.
58 Dosage in Radiotherapy of Tumors. (Massendosirung bei Tumoren.) A. Hessmann.
59 Metastatic Tumor in Pleura with Primary Racemose Sarcoma of Cervix Uteri. A. Heddäus.
60 *Results of Operative Treatment of Diffuse Peritonitis. H. Schmid.
61 Experimental Transplantation of Thyroid and Parathyroids. (Ueber homoioplastische Epithelkörperchen- und Schilddrüsenverpflanzung.) H. Leischner and R. Köhler.
62 Echinococcus Disease of the Bones. (Knochenechinokokkus.) I. Titow.

60. **Operative Treatment of Diffuse Peritonitis.**—Schmid reviews the experiences in this line in Körte's surgical service at Berlin. Rigidity of the abdominal walls and local pain indicate the danger and demand immediate operation. To wait until further signs of peritonitis develop, after perforation of the stomach or other organ or appendicitis, is to court disaster. Perforation of lower parts of the intestines has a graver prognosis. The outcome in all cases depends more on the stage of the peritonitis than on technic. Peritonitis pus is peculiarly dangerous for loose cellular tissue, fat tissue and for the fascia of the abdominal wall. The abdomen can master small amounts of infectious material but succumbs when confronted with too much. Prevention and early operation are the watchwords of success, he declares. In 358 operative cases the mortality among the 235 patients in whom the abdomen was rinsed out—which includes all the severer cases—was 40 per cent., while it was 42 per cent. in the others. The mortality was 25 per cent. for both groups in the cases in which the operation was done within three days after the onset of trouble. It was 55.4 per cent. in the "rinsed" patients operated on by the fourth day or later, while it was 69.2 per cent. in the corresponding group of the "non-rinsed" patients. This difference speaks volumes, he declares, in favor of rinsing out the abdominal cavity as the second group contained all the milder cases.

Beiträge zur Klinik der Tuberkulose, Würzburg

XVIII, No. 2, pp. 175-302. Last indexed January 14, p. 159

63 Comparative Research on Acid-Fast Bacilli. (Vergleichende Untersuchungen mit den praktisch wichtigeren säurefesten Bazillen.) N. Jancso and A. Elfer.

Berliner klinische Wochenschrift

January 2, XLVIII, No. 1, pp. 1-48

64 *Typical and Atypical Pulmonary Tuberculosis. (Lungenphthise.) D. v. Hansemann.
65 Malignant Syphilis and Salvarsan. A. Buschke.
66 Cutaneous Reaction of Syphilids Under Salvarsan. R. Kalb.
67 *Salvarsan Given the Nursing Mother for Inherited Syphilis in Infants. J. Peiser.
68 Radiography of the Lungs. (Die anatomischen Substrate der Lungenröntgenogramme und ihre Bedeutung für die Röntgendiagnostik der Lungentuberkulose.) M. Cohn.
69 *Reaction in Urine of Breast-Fed Infants. S. Engel and L. Turnau.
70 Present Status of Tropical Diseases. (Fortschritte auf dem Gebiete der Tropenkrankheiten.) H. F. W. Hoffmann.

January 9, No. 2, pp. 49-100

71 Proctoscopy and Anemia from Varices in Upper Rectum. (Recto-Romanoskopie und schwere Anämien durch Blutungen aus hochsitzenden Varicen des unteren Dickdarms.) C. A. Ewald.
72 The Electrocardiogram with Displacement of the Heart. G. F. Nicolai.
73 Susceptibility to Bacterial Infection. (Bakterienempfindlichkeit und ihre Bedeutung für die Infektion.) F. Neufeld and H. Dold.
74 The "Interstitial Gland" of the Ovary Found in Certain Animals. (Die interstitielle Eierstocksdrüse.) L. Fraenkel.
75 *Remarkable Urinary Concrements. (Ungewöhnliche Blasen- und Nierensteine.) M. Roth.
76 Brief Ethyl-Chlorid General Anesthesia. M. Behr.
77 Theory of Anaphylaxis. U. Friedemann.

64. **Atypical Tuberculous Processes in the Lung.**—Hansemann believes that important information as to the curability of pulmonary tuberculosis can be derived from the study of necropsy findings in deaths from various causes. Diseases which do not show a tendency to spontaneous cure are not amenable to therapeutics. Therapeutics, therefore, he says, is engaged merely in cooperating with and fostering the natural tendency to heal. Unless the anatomic findings show a tendency to a spontaneous cure under favorable conditions, little can be hoped from treatment; he has never known of a case of acute miliary tuberculosis which terminated in recovery. The same can be said of acute disseminated cheesy bronchitis. Anatomic findings suggesting even a beginning of a healing process with these affections have never yet been encountered, to his knowledge. With tuberculous apical processes no recovery is known when the lesion extended below the second or third rib; the most that can be expected from treatment in these cases is to prolong life. It is impossible to destroy all the tubercle bacilli in such advanced cases. In regard to the importance of mobilizing the superior aperture—the Freund operation—he admits the usefulness of curing the rigidity of the part but thinks that this can be accomplished by gymnastics—exercises of the muscles attached to the upper rib. He emphasizes in particular the importance of this mobilization as a prophylactic measure in families with a history of tuberculosis and an inherited tendency to stenosis of the superior aperture. He is convinced that if orthopedic measures of this kind could be commenced about the age of 12 and continued to 21, the development of typical pulmonary tuberculosis might be avoided in many cases. It is the task of the family physician to warn the parents of the necessity for such treatment for their children, especially when they are growing fast and the chest is flat and narrow. In conclusion he insists anew on the necessity for antisyphilitic measures when a tuberculous process develops in a syphilitic. Typical pulmonary tuberculosis always begins in the apex, he states, but atypical forms are encountered almost invariably in children and in the aged.

67. **Salvarsan in Inherited Syphilis.**—Peiser refers to four cases in recent literature in which salvarsan taken by the nursing mother had a beneficial effect on the infant with severe manifestations of syphilis. He then describes two cases and refers to four recently reported in which no benefit was apparent although the mothers were given salvarsan systematically.

69. **Urine Reaction in Breast-Fed Infants.**—Engel and Turnau state that a black precipitate forms in the urine of breast-fed infants when 15 or 20 drops of a 2 per cent. solution of silver nitrate are added to 5 c.c. of the urine. The discoloration reaches its height in ten minutes or still earlier if the fluid is heated. There is no black discoloration with urine from bottle-fed infants.

75. **Urinary Concrements.**—Roth gives an illustrated description of a number of cases of remarkable kidney and bladder concrements and comments on the difficulty of differentiation when, as often happens, the symptoms are slight and misleading, or there may be no subjective symptoms. The main point is to bear the possibility of eventual stone formation in mind. In one of his cases nothing suggested kidney stone until the cystoscope revealed the source of the bleeding as in the kidney. Patients with hematuria are too apt to be lost sight of after the hemorrhage is over, and yet hematuria, he insists, is almost invariably the manifestation of some important urogenital affection. Mistakes will be avoided far more frequently if the cystoscope is used even with apparently merely nervous symptoms on the part of the bladder. No one should be classed as a "sexual neurasthenic" until after exclusion of all other possible causes.

Correspondenz-Blatt für Schweizer Aerzte, Basel

January 1, XLI, No. 1, pp. 1-48

78 Salvarsan in Syphilis. E. Heuss.

January 10, No. 2, pp. 49-80

79 Modified Definition of Spores. (Warum ist est berechtigt, der granulären Form des Tuberkulosevirus Sporencharakter zuzuschreiben?) W. Knoll.
80 Transfusion of Blood in Pernicious Anemia. Tièche.

Deutsche medizinische Wochenschrift, Berlin

January 12, XXXVII, No. 2, pp. 49-96

81 Syphilis in Rabbits. (Syphilitische Allgemeinerkrankung bei Kaninchen.) P. Uhlenhuth and P. Mulzer.
82 *Poisonous Butterine. (Verwendung gesundheitsschädlicher Stoffe in der Margarinefabrikation.) W. P. Dunbar.
83 *Fever with Malignant Kidney and Suprarenal Tumors. J. Israel.
84 *Phenolphthalein Test for Occult Hemorrhage in Gastro-Intestinal Tract. I. Boas.
85 Relations Between Tabes Dorsalis and Leptomeningitis. M. Astwazaturow.
86 Bactericidal Properties of Effusions. S. Weil.
87 Nail Extension. T. Voeckler.
88 Plastic Operation with Functional Cure of Severe Trapezius Paralysis. O. Rothschild.

82. **Poisonous Butterine.**—Dunbar's communication, giving the results of his research, was summarized in the Berlin Letter, February 11, page 435. He warns of the danger of new poisonous ingredients being used in the production of articles intended for food as the manufacturers go farther afield in search of less expensive ingredients for their products. (As stated in the Berlin Letter, January 7, page 54, the firm manufacturing the poisonous butterine advertised a reward for "discovery of the person who had adulterated the product," suggesting that it was a criminal act of revenge. But Dunbar traced the disturbances to a new ingredient used in making the butterine.)

83. **Fever With Malignant Tumors in Kidneys or Suprarenals.**—Israel has encountered eighteen cases in which a tumor in a kidney or suprarenal was accompanied by intermittent or relapsing fever. In some of the cases the fever was for a long time the only sign that anything was wrong. In twelve of the cases the cancer was confirmed by an operation and he gives the temperature curve of some in this group, showing the complete disappearance of all tendency to fever after removal of the cancer, and its persistence without much modification after merely palliative or partial operations. With metastasis the fever flares up again as also if some hitherto latent cancer germs rouse to malignant energetic growth. The outcome was less favorable in the febrile than in the non-febrile cases. The importance of suspecting cancer with fever of unknown cause is illustrated by the case of a patient at the Trousseau hospital at Paris, with a large tumor in the left kidney and intermittent fever, who was long treated on the assumption of malaria and enlarged spleen. One of Israel's patients with hectic fever but no signs of pulmonary or bronchial tuberculosis was sent to a sanatorium for lung diseases until development of signs pointing to a tumor in the kidney. Israel comments on the scanty literature on fever with renal cancer and hypernephroma, some of the most experienced clinicians not even mentioning the subject; but he declares that this must be due to inadequate study of the cases or misinterpretation of the findings or to too brief period of observation before the operation. In some patients the fever always accompanied or just preceded hematuria. The fever was observed with cancers of different histologic structure. The rapid growth of the tumor, propagation to the adipose capsule, veins or adjoining tissue favor the development of a febrile temperature but are not indispensable for it.

84. **The Phenolphthalein Test for Occult Gastro-Intestinal Hemorrhage.**—Boas remarks that the benzidin test for occult bleeding is so sensitive that the findings are liable to be misleading; even having eaten a little meat, days before, may lead to a positive response. On the other hand, the unmodified guaiacol test is not sensitive enough. Midway between them stands the phenolphthalein test which he commends to the general practitioner as more reliable than either while it

is extremely simple, the reagents used are durable, and the color reaction is so pronounced that it is impossible to mistake it. He tabulates the comparative findings with the three tests and describes the technic. The stool is rubbed up in water till it forms a thin fluid. Into this a little acetic acid is stirred; ether is then added, and the reagent glass is slowly moved to and fro until the contents are well mixed. The ether is then decanted into another reagent glass and 20 drops of the phenolphthalin reagent are added, the whole is shaken and then 3 or 4 drops of hydrogen dioxid are added. In the presence of blood the phenolphthalin is oxidized into phenolphthalein and as it is in an alkaline medium the fluid turns pink. With considerable blood the pink tint persists for some time, with very little blood the pink tint soon fades away. The reagent is made by dissolving 1 gm. of phenolphthalein and 25 gm. of potassium hydroxid in 100 gm. water and reducing with 10 gm. of pulverized zinc. The resulting red fluid is stirred or shaken over a small flame until it is entirely decolored, the phenolphthalein being reduced to phenolphthalin. It is then filtered when it is ready for use and keeps indefinitely. With much admixture of blood the reaction is pronounced even without addition of hydrogen dioxid. No meat should be eaten for a few days before the test.

Deutsche Zeitschrift für Chirurgie, Leipsic

December, CVIII, Nos. 1-2, pp. 1-220

89 Extradural Surgical Anesthesia. A. Läwen.
90 *Origin and Treatment of Ischemic Muscular Contracture and Gangrene. B. Bardenheuer.
91 Plastic Technic After Amputation of Breast. L. Heidenhain.

90. **Treatment of Ischemic Contracture and Gangrene.**—Bardenheuer devotes about 155 pages to his study of the origin and treatment of these conditions illustrating the various points by examples from his own experience. The prognosis depends, he says, on the period in which the ischemic myositis or contracture is discovered and suitable treatment applied. This should include search for the central, causal, retromuscular or retrofascial hemorrhage probably responsible for the trouble or measures to prevent its development, treatment of the primary acute ischemic myositis and means to correct the resulting contracture. The conditions are graver in different regions.

Medizinische Klinik, Berlin

January 8, VII, No. 2, pp. 45-84

92 Gonorrheal Pyosalpinx. E. Opitz.
93 Chronic Intestinal Catarrh. (Leitsätze über die Diagnose, Pathogenese und Aetiologie des chronischen Darmkatarrhs.) E. Schmidt.
94 Functional Tests of the Stomach in General Practice. (Soll der praktische Arzt diagnostische Magenfunktionsprüfungen vornehmen?) F. Goldschwend.
95 *Improved Serodiagnosis of Syphilis. (Serodiagnose der Syphilis mittels Präzipitation von Natr. glycochol. unter Heranziehung des Cholesterins.) O. Herman and A. Perutz.

95. **Improved Serodiagnosis of Syphilis.**—Herman and Perutz having simplified the precipitation test devised by Elias, Neubauer, Porges and Salomon report positive results in 108 out of 134 cases of syphilis, while the Wassermann reaction was positive in only seventy-two out of 102. Their test consequently gave 4 per cent. more positive reactions than the Wassermann technic. In eighty-nine control cases traces of precipitation were observed in only a single instance, the findings in all the other cases being negative. They commend their modification as practically reliable, much simpler than the Wassermann test and as destined to wide application in general practice for the serodiagnosis of syphilis. The technic requires only a little blood, which is allowed to stand for a few hours. The clot is then detached with a platinum wire, the serum is centrifugated, the sediment removed, and the serum is then inactivated by heating exactly to 65 C. for half an hour in the water bath. The serum should not be powerfully hemolytic. The reagent is a mixture of 2 gm. sodium glycocholate with 0.4 gm. cholesterin and 95 per cent. alcohol to 100 c.c. This mixture is diluted with distilled water, 1 to 20. The second reagent is a freshly made 2 per cent. aqueous solution of sodium glycocholate. To 0.4 c.c. of the serum are added 0.2 c.c. of the twenty times diluted reagent 1, and 0.2 c.c. of the 2 per cent. sodium glycocholate solution, and the whole is well shaken. The test tube is then plugged with cotton and allowed to stand quietly at room temperature for twenty-four hours. After twenty-four hours distinct precipitation indicates a positive reaction but if the fluid is merely turbid with fine flakes and no precipitate thrown down the reaction is regarded as negative. The findings in 223 cases are tabulated for comparison, the non-syphilitic cases showing, with a single exception, a constantly negative reaction.

Mitteilungen aus den Grenzgebieten der Med. und Chir., Jena

XXII, No. 3, pp. 311-510. Last indexed January 28, p. 312

96 Drumstick Finger with Subclavian Aneurysm. (Entstehung der einseitigen Trommelschlägelfinger bei Aneurysmen der Arteria subclavia.) E. Ebstein.
97 *Inflammation of Adipose Capsule of Kidney. (Entzündung der Nierenfettkapsel.) W. Bussenius and C. Rammstedt.
98 *Tuberculous Articular Rheumatism. (Ueber einen autoptisch verifizierten Fall von tuberkulösem Gelenkrheumatismus.) E. Melchior.
99 *Syphilitic Spondylitis. (Syphilitische Wirbelentzündung.) H. Ziesché.
100 Surgical Treatment of Intestinal Syphilitic or Cancerous Stenosis. H. Schmilinsky.
101 Hyperplastic Muscle and Salivary Gland Disease. (Speicheldrüsenerkrankung und Myopathie.) S. Schoenborn and K. Beck.
102 *Postoperative Paralysis of Stomach. (Postnarkotische Magenlähmung.) A. Payer.
103 Histology and Functions of Gastric Mucosa. (Magenschleimhaut, insbes. bei chronischen Erkrankungen des Magens.) J. E. Schmidt.

97. **Inflammation of Adipose Capsule of Kidney.**—Bussenius and Rammstedt remark that the syndrome resulting from mere congestion and infiltration of the adipose capsule has not been much studied. Soldiers are especially liable to it as result of contusions, kicks, riding unruly horses, lifting heavy weights, etc. Sometimes the syndrome comes on insidiously but more often it comes on abruptly with chill and high fever. The temperature rises in a series of peaks, then remains continuous for a day or so, then becoming remittent with low morning and high evening curves. Even a difference of 2 C. (3.6 F.) between morning and evening temperatures is not conclusive of suppuration. The pulse-rate is generally faster than the temperature would warrant, and sweats may also be observed. The digestive apparatus usually shares in the disturbance, and constipation follows after a period of diarrhea in some cases. Sudden pain is characteristic, not always in the kidney itself, but below, and pressure increases the pain. It may radiate to the stomach, bladder, cecum, perineum or genitals. The chief tender point is found just below the twelfth rib and pressure here generally brings on the pain anew, as also deep breathing, coughing and moving the trunk. There is some swelling of the lumbar region unless the trouble is in the front of the capsule. Seven cases are reported in detail. They show that the patients can recover under medical measures alone in some cases. The general condition is the criterion; if the patient does not seem to be growing worse, expectant treatment is justified. Repeated exploratory punctures are useful, and the hot-air apparatus frequently renders good service. In the authors' cases, potassium iodid seemed to have a decided influence in promoting absorption of the products of the inflammation. Under these measures three of the patients recovered entirely, although slowly, but in the other cases the process passed into a suppurative stage, and recovery followed evacuation of the pus. They advise operative treatment, even if no pus is evident, if the general condition seems to be growing worse and the patient weaker. The pus may make its way into the intestines, bladder or ureter and a spontaneous cure may thus be realized.

98. **Tuberculous Articular Rheumatism.**—Melchior remarks that only four cases have been published to date in which the tuberculous nature of the articular rheumatism has been established beyond question, and to this list he now adds a fifth. The patient was a girl of 19 with glandular tuberculosis as a child and later a tuberculous process in the lower jaw compelling total resection in 1909. Twelve days after the operation, moderate fever developed with multiple acute swelling of joints, the syndrome deceptively resembling that of acute articular rheumatism except for the relatively low fever, the slight painfulness of the lesions in the joints, their torpid character and the absence of the sweats characteristic of ordinary acute articular rheumatism. Tubercle bacilli were found in the blood. The joint lesions seemed to subside

spontaneously so that by the end of three months nothing was left of them except a slight thickening of one knee. The patient died in a few months from amyloidosis, independent of the joint processes. Necropsy revealed tuberculous nodules in the synovial membranes of the joints which had been involved. During life inoculation of animals had been negative, showing that the presence of tubercle bacilli in the synovial membrane does not necessarily imply their presence in the effusion in the joint.

99. **Syphilitic Spondylitis.**—Ziesché reports a case and reviews recent literature on this subject, tabulating the details of eighty-six cases he has found on record. The affection is generally considered as unusually malignant but this, he thinks, is because it is not recognized until it is in an advanced stage. In the case of a child the condition received treatment early and improvement was soon realized. In this case there was not the slightest reason for suspecting syphilis; the first sign of trouble was a gibbus in the region of the first and second lumbar vertebræ. The tuberculin tests were negative but the Wassermann reaction was positive although no swollen glands could be discovered. Investigation disclosed syphilis in the child's nurse. Mercury and iodid brought rapid improvement. Ziesché is convinced that syphilitic spondylitis is more frequent than generally suspected; in the mild cases the lesions heal and nothing is known of them. In this compilation the age was mentioned in fifty-three cases, and 28 per cent. of the patients were between 30 and 40; 22.7 per cent. under 10, and 11.3 per cent. between 50 and 60. The cervical vertebræ alone were involved in sixty-one of the eighty-eight cases; the thoracic in twelve; both in one, and the lesions were diffuse in four cases. In over 41 per cent. only one vertebra was affected, two vertebræ in over 28 per cent., and four in 5 per cent. In eight of the sixty cases of syphilis of the cervical vertebræ death occurred suddenly. Thirty-eight of the patients recovered under appropriate measures although left with more or less functional disturbance. Mercury and potassium iodid should be given in large doses, he says, even transient salivation should not be allowed to interrupt the treatment, and the iodid should be continued for a time after apparent recovery.

102. **Acute Dilatation of the Stomach After General Anesthesia.**—Payer states that a fatal termination occurred in over 53 per cent. of the cases of this trouble in the literature and his own experience. The diagnosis in time is more important here than in almost any other affection, he emphasizes, as change of position is the only and the efficient cure. The trouble has been called by twenty-one various names, including pseudo-ileus, mesenteric incarceration of the bowel and also acute paralysis of the stomach. The initial shock, the increased peristalsis and antiperistalsis and secondary acute dilatation of the stomach form the general description of the syndrome, but Payer is convinced that the trouble is in reality a primary paralysis of the stomach from the toxic action of the anesthetic. For several years he has been examining the stomach functioning before and after operations under general anesthesia, and he found more or less of a tendency to paralysis of the stomach in nearly every instance. This paresis is accompanied by gastrorrhea and each in turn aggravates the other; if the patient lies on his back serious trouble may follow while if he is turned on his right side the stomach contents flow spontaneously out of the stomach. Atony of the stomach is almost invariably evident as the patient rouses from the anesthetic; sometimes the lower margin of the stomach will be found below the umbilicus, but this atony generally subsides so that no trace is left after from twelve to twenty-four hours. Postoperative vomiting is directly connected with this atony; in every case in which it persisted longer than this, the atony also persisted. The critical period is from the third to the fifth day, when a more liberal diet is allowed. Even although there may be no symptoms, investigation will show how the lower margin of the stomach drops lower, the effect being more pronounced the shorter the interval since the anesthesia. Errors in diet have a marked influence on the development of the paresis, and children are especially liable to it. Even a week after the anesthesia, acute dilatation of the stomach and distention may occur. Drainage of the peritoneal cavity is also liable to affect the stomach and induce atony, as he observed in two striking cases—an appendicular abscess in a child and a liver abscess in a man. Payer now makes a point of having the patient lie on the right side if there is any tendency to vomiting after from twelve to twenty-four hours. This generally answers the purpose but if disturbances persist he gives a chamomile tea enema, with the patient still lying on the side, repeating the enema frequently at need, giving nothing by the mouth. In very severe cases the knee-chest position was the only means of final relief; this never failed. He never had to resort to lavage of the stomach. During the last two years he has been giving oxygen freely in connection with the anesthesia, to paralyze the toxic action of the chloroform, and imagines that he has noted a favorable influence on the gastric paresis. This postnarcotic gastric paralysis, as he calls it, has been observed after the most diverse operations. He lists also the predisposing factors as they have been recorded in the literature and also the factors that proved the last straw. The latter list includes overfilling of the stomach with food or fluids, the toxic action of veronal, or of scopolamin, dread of the operation, abdominal straining, compression of the abdomen by a plaster cast, tamponing the abdominal cavity (Nakahara), compression of the duodenum by tampons, wandering kidney or liver, drastic purgative (Jacoby), and saline purges, increasing the stomach content by osmosis (Selby).

Monatsschrift für Kinderheilkunde, Leipsic

IX, No. 8, pp. 383-446. Last indexed January 7, p. 82

104 *Formula for Estimating General Condition of Infants. (Formel zur Beurteilung von Säuglingen in bez. auf ihren Allgemeinzustand.) J. Bauer.
105 Metabolism of Infants with the Exudative Diathesis. F. Steinitz and R. Weigert.
106 Lessening of Sensibility to Opium with Increasing Age of Laboratory Animals. (Empfindlichkeit verschieden alter Tiere gegen die Opiumalkaloide.) E. Döbeli.
107 Advantages of Large Doses of Antitoxin in Diphtheria. I. Wickman.
108 *After-History of Children with Eczema. (Schicksal von Ekzemkindern.) E. Moro and L. Koll.
109 Leukemia with Skull Tumor in a Year-Old Child. O. Herbst.

104. **Formula for Estimating General Condition of Infants.**—Bauer thinks that a good estimate for comparison can be obtained by dividing the weight in grams by six times the length in millimeters, plus three times the age in days. The formula for this is: $W \div 6(L+3D) = X$. Weight $\div 6$ (Length $+3$ (Age in) days) = the unit of health.

108. **After-History of Children with Eczema.**—Moro and Koll have traced the fate of sixty-three boys and thirty-seven girls between 3 and 11, known to have suffered from chronic eczema during infancy. The majority were found apparently healthy. No special tendency to the rheumatic or gouty diathesis could be discovered in these children or their parents and no evidence of special overfeeding. Another point brought out is the frequency of spasmophilic phenomena in infants with the exudative diathesis. The coincidence is too striking to be merely casual; it seemed rather as if both were clinical manifestations of one and the same diathesis. The total findings are tabulated under various headings and compared with similar data from control groups.

Münchener medizinische Wochenschrift

January 10, LVIII, No. 2, pp. 65-120

110 Chemical Composition of the Nucleus of the Cell. (Chemische Beschaffenheit des Zellkerns.) A. Kossel.
111 *Gastrospasm. R. Waldvogel.
112 Hemagglutinin Reaction in Serum Sickness. F. Bauer.
113 *Premonitory Symptoms of Puerperal and Postoperative Thrombosis and Embolism. H. Michaelis.
114 Salvarsan in Treatment of Syphilis of the Nervous System. H. Marcus.
115 Salvarsan in Syphilis. Favento.
116 Hectine in Syphilis. C. Ravasini.
117 *Direct Massage of the Heart with Apparently Fatal Chloroform Accident. (Erfolgreiche direkte Herzmassage bei Narkosenscheintod.) A. T. Jurasz.
118 Lead Poisoning from Glazed Earthenware Preserve Jars. (Bleivergiftung durch irdenes Topfgeschirr.) J. Wengler.
119 Subcutaneous Injections of Natural Radio-Active Mineral Water. F. Hirz.

111. **Gastrospasm.**—Waldvogel is convinced that true gastrospasm is a very frequent if not the most frequent affection of the stomach, far more common than the often mistakenly

diagnosed gastric ulcer, while the symptoms resulting from the gastrospasm are more constant than those from altered secretion. The prognosis of gastrospasm is favorable under appropriate treatment, that is, sedative measures to reduce the irritability of the innervation of the stomach and of the nervous system in general. He differentiates the condition by the level of the lower margin of the stomach after the patient has taken an effervescing mixture: 4 gm. of sodium carbonate and 4 gm. of tartaric acid, each in 100 c.c. of water. He gives the mixture two or three hours after breakfast or four or five hours after dinner and has the patient recline. Finger percussion from the nipple downward shows that the inflated stomach under these conditions, in a healthy and not excited person, always reaches to the umbilicus. The findings are much more reliable with this test, he thinks, than with bismuth and radiography. He accepts gastrospasm when with the complaints of oppression, pain and eructation of pure air without odor or taste, the lower margin of the stomach is found to be a handbreadth above the umbilicus and only two or three fingerbreadths below the costal arch. The contraction of the stomach is most marked in the region nearest to the umbilicus. In some cases, the entire effervescing mass was explosively vomited—a further confirmation of the assumed gastrospasm in the absence of palpable stomach lesions. The gastrospasm is generally observed with clinical pictures in which spasms of all kinds are common. Lead poisoning is a frequent cause, and also abuse of tobacco, arteriosclerosis of the abdominal vessels and uremia. But chief of all causes is general neurasthenia, and various signs of nervous excitability and abnormally low nervous threshold generally accompany the gastrospasm, such as tremor of the fingers and tongue, accelerated pulse, insomnia, etc. Gastrospasm on the other hand is seldom encountered with hysteria. He adds that in one case the patient dropped tobacco completely after long abuse and a condition of atony of the stomach followed which lasted for several weeks.

113. **Premonitory Signs of Thrombosis.**—Michaelis had a fatal case of pulmonary embolism in the first week he set up practice for himself; this was followed by two non-fatal cases of embolism in less than six months and five others in two years. Since then he has not had thrombosis develop in any case and he is convinced that his careful prophylactic measures now are responsible in large part for the absence of this serious puerperal and postoperative complication. It always gives warning, he declares, in the form of a very slight rise in temperature, possibly transient and unnoticed unless the temperature is taken four times a day and the thermometer left in place for fifteen minutes at least. This alone permits the recognition of a temperature above 37.5 C. (99.5 F) at any time during the day. He does not say, of course, that every subfebrile temperature is an index of the onset of thrombosis, but that anything over 37.5 C. suggests the necessity for caution and close supervision of the patients, guarding them against any violent movement, any excitement or fright, and keeping the bowels loose with oil injections, and a mild laxative and suitable diet. If the patient is allowed to get up early, heedless of the warning of the slight subfebrile temperature, danger looms large. He is convinced that these measures and keeping the patient in bed for a week as quiet as possible, have contributed in no small proportion to the smooth recovery of many of his patients showing slight transient subfebrile temperature, thus tiding them past the danger stage.

117. **Direct Massage of the Heart in Apparently Fatal Chloroform Accidents.**—Jurasz reports another case in which the patient's heart and lungs ceased functioning suddenly during a long operation; by prompt massage of the heart, with the hand introduced in the laparotomy wound and squeezing the heart through the diaphragm, the vital functions were restored. The patient was a woman of 50 whose pylorus was being resected for cancer. All went well for an hour, but as the duodenal stump was being attended to, the apparently fatal accident occurred. Artificial respiration was kept up at the same time as direct massage was applied to the heart and oxygen pumped into the lungs. The heart showed the effect of the massage in two minutes and the patient began to breathe spontaneously. The massage and artificial respiration were then suspended, but immediately the syncope came on again. The artificial respiration and heart massage were then resumed and in a minute the vital functions began again. The operation was then concluded under a few whiffs of ether, with no further disturbance. The pulse at the close was small but regular and recuperated under a few injections of camphor so that no further stimulants were necessary. Eight minutes in all elapsed between the first stoppage of the heart and its definite revival and no further disturbance in its functioning occurred although the operation was continued and more of the anesthetic given. Jurasz has found records of sixty-four cases of direct massage of the heart in the literature. The patients were resuscitated in two out of the twenty cases in which the massage was done through the chest wall and in eleven of the twenty-six cases in which the heart was massaged through the diaphragm. None of the patients survived when the hand was introduced through an opening made for it in the diaphragm. The total recoveries thus number thirteen or 23.3 per cent. of the cases, but temporary success was obtained in fifteen additional cases. He advises incising the epigastrium in five minutes at latest after arrest of the heart functioning and seizing the heart between the thumb and two fingers, to squeeze it rhythmically about sixty times a minute, supplementing this with artificial respiration and insufflation of oxygen if possible. The massage and artificial respiration should be kept up for a time after the first spontaneous movements. It is sufficient to sterilize the field with tincture of iodin, massaging with the gloved hand.

Therapeutische Monatshefte, Berlin

January, XXV, No. 1, pp. 1-80

120 *Digitalis in Arrhythmia. (Digitaliswirkung bei unregelmässiger Herztätigkeit.) E. Edens.
121 Action of Digitalis on the Isolated Vessel Walls. R. Gottlieb.
122 Action of Strophanthin on the Heart. R. Gottlieb.
123 *Mode of Action of Certain Diuretics. E. Meyer.
124 Treatment of Furuncles. A. Schüle.
125 Treatment of Rhinophyma. F. Pels-Leusden.
126 Radiotherapy of Tubercles. H. Dietlen.
127 Serotherapy. (Therapeutischer Wert der Heilsera.) H. Risel.
128 Salvarsan in Syphilis. L. Halberstaedter.

120. **Action of Digitalis in Arrhythmia.**—Edens states that the newer methods of examining the pulse and heart action have only strengthened our confidence in digitalis. When the drug fails to act—which used to be ascribed to impurities in the drug—we now know that it is because the heart affection is of a kind which is not influenced by digitalis. This very failure is proving a most important aid for diagnosis and prognosis, as he illustrates by a number of case-reports and tracings. The chief element in the action of digitalis, possibly, is the promotion of the circulation through the coronaries by the lengthening of the diastole and the better filling of the arterial system. When mechanical obstacles, such as aortic insufficiency, interfere or when the acceleration of the pulse is the result of nervous influences rather than of insufficiency of the heart muscle, then digitalis is liable to fail. The drug is thus liable to render good service, he asserts, in differentiating the various kinds of extrasystoles and in improving the contracting power of the heart. It may seem to induce a bigeminus rhythm of the entire heart but under its continued administration the rhythm alters so that the contraction of the auricle occurs simultaneously with that of the ventricle systole while the interval between the first and second systole persists unmodified. These are the cases described by Hering as "pseudo-alternans," and Edens has encountered five such cases; the digitalis induced bigeminus of the ventricles while retarding the auricle beat.

123. **Action of Diuretics.**—Meyer reports experiences which show that the improvement in the circulation liable under digitalis may be followed by very much increased elimination not only of urine but of sodium chlorid in the urine. In a case of extreme dropsy with only 360 c.c. of urine, under digitalis the urine increased in two days from 360 to 3,300 c.c. and the sodium chlorid from 2.9 to 26.4 gm. A similar remarkable diuretic action was observed in a case of tuberculous polyserositis under calomel and digitalis, the figures being almost identical with those in the first case. He

explains this action of calomel as due to the absorption of the fluid effused into the intestines under the influence of the calomel.

Therapie der Gegenwart, Berlin

January, LII, No. 1, pp. 1-48

129 Physical Measures as Aid in Treatment. (Ueber Gymnastik in der häuslichen Praxis.) A. Goldscheider.
130 *Inhalation of Superheated Air in Bronchitis. (Behandlung der Bronchitis und verwandter Zustände mit trockner, heisser Luft.) A. Schmidt.
131 *Infant Feeding in Health. (Ernährung des gesunden Säuglings.) M. Pfaundler.
132 *Resection of Spinal Nerve Roots for Spastic Paralysis. O. Foerster.
133 *Gastric Surgery. (450 in drei Jahren ausgeführte Magenoperationen.) H. Küttner.
134 *Treatment of Uterine Hemorrhage. B. Kroenig.
135 Politzer's Air Douche During Deep Inspiration. (Neuere Modifikation meines Verfahrens zur Wegsammachung der Eustachschen Ohrtrompete.) A. Politzer.

130. Treatment of Bronchitis by Dry, Hot Air.—Schmidt has been systematically applying this measure for a number of years and has found it useful in simple chronic catarrhal inflammation of the larynx and bronchi; it is less effective in emphysema bronchitis and bronchiectasia, and is unreliable in tuberculous pulmonary and laryngeal processes. The patients inhale the superheated air through a tube with removable glass mouthpiece; the air is filtered through cotton, dried by passing through calcium chlorid and heated in a small chamber inside a large, asbestos-coated stove heated by gas or electricity. A thermometer is mounted in the tube near the mouth. The patients experience great relief from the dry hot air thus inhaled through the mouth and expelled through the nose and in many cases the bronchitis seemed to be permanently cured.

131. Infant Feeding.—Pfaundler suggests, as a readily remembered formula for a healthy infant, taking cow's milk to one-tenth of its weight in grams, adding carbohydrates to one-hundredth of its weight, and water to bring the whole to 1 liter; the whole is divided into five portions and as much of each portion given as the child drinks with relish. This formula is useful from the second to the sixth month; and may be modified according to the child's individual digestive functioning. He prefers for the carbohydrate up to the fourth month sugar and oatmeal gruel, after the fourth month a 2 to 4 per cent. wheat, flour or barley gruel.

132. Resection of the Posterior Nerve Roots for Spastic Paralysis.—Foerster states that this operation has now been done in forty-five cases to date, including twenty-seven of Little's disease. The best results have been obtained in Little's disease, a large number of totally bedridden patients having been restored to their feet. Satisfactory results have also been obtained in a case of tuberculous spondylitis, in one of a traumatic transverse lesion of the spinal cord, and in spastic paralysis of the legs following hydrocephalus or encephalitis in childhood. The results were disappointing in the five cases of multiple sclerosis. In five cases of spastic paralysis of the arm after hemiplegia good results were obtained in three but only moderate benefit in a fourth. A fifth patient whose operation dates from eight weeks is already beginning to use his arm which had been totally paralyzed before the resection of the posterior roots. The majority of the patients have thus been benefited by the operation. The principles and technic were described in THE JOURNAL, Oct. 16, 1909, page 1342.

133. Operations on the Stomach.—Küttner comments on the exceptional prevalence of gastric cancer in southeastern Germany; in the last three years the surgical clinic at Breslau in his charge has had 426 patients with certain gastric cancer and 258 suspects, with 130 with non-malignant surgical gastric affections. About 30 per cent. of the cancer patients had suffered for years from stomach trouble while the others had noticed gastric symptoms only for less than six months. In 10 per cent. of the cases there had been no pain; in 20 per cent. no vomiting; in 7 per cent. no loss in weight—usually the patients had lost from 20 to 30 pounds. In a very few cases there had been nothing to attract attention to the stomach, the patient complaining merely of lassitude and loss of weight. In 31 per cent. the palpation findings were negative. There was no hydrochloric acid, or merely traces, in 73 per cent.; lactic acid was noted in 57 per cent., and traces of bleeding in only 61 per cent. In a few patients both the motor and secretory functioning of the stomach seemed to be entirely normal. He performed a radical operation in 102 cases, using the Billroth II technic and Murphy button, silk sutures and plastic reenforcement of points exposed to special stress. The immediate mortality was 24 per cent. mostly from defective suturing or complications on the part of the lungs, pneumonia or cachexia. To date, after an interval of from one to three years, 37.5 per cent. of the patients are still living; the proportion of cured after three years was 30 per cent. in his previous series. Nearly half of the patients who had gastro-enterostomy done for a callous gastric ulcer have succumbed since to gastric cancer, and only 16 per cent. are still in good health of those whose condition is known.

134. Treatment of Obstetric and Gynecologic Hemorrhage.—Among the other measures described, Krönig expatiates on the success of compression of the abdominal aorta by a tourniquet and pad applied to the artery. This seems to answer the same purpose as the Momburg technic while it does not have the unpleasant by-effects of the latter, he says. The aorta compressor devised by Gauss has been applied in 100 cases and has proved eminently useful; its unwieldiness however, gives the Momburg technic the advantage outside of an institution. He comments on the transformation in the conception of uterine hemorrhage in the last few years, the defective functioning of the ovaries now being incriminated rather than the uterus. Treatment therefore is directed more to the ovaries and curetting of the uterus is regarded now as a mere symptomatic measure, no longer causal treatment. The aim should be to act on the ovaries directly or indirectly by way of other ductless glands, possibly by organotherapy, or radiotherapy. The Roentgen rays have shown great efficacy in this respect, and are proving, he says, a powerful means of treating climacteric hemorrhage, menorrhagia during the forties and in hemorrhage with uterine myomas. Over seventy patients have been given systematic radiotherapy for myoma and, with the exception of two cases in which the course was not completed, all the patients were clinically cured and the growth of the myoma arrested or it has entirely retrogressed. The Roentgen-ray treatment has superseded operative measures at his clinic as it has so many advantages over the latter and the disturbances from the Roentgen menopause are comparatively insignificant as it is brought on so gradually. The only objection is the expense. He remarks in conclusion that no progress seems to have been realized in late years in the management of uterine hemorrhage from cancer, gonorrhea or tuberculosis. With hemorrhages at puberty and chlorosis, radiotherapy is not possible on account of danger of injury of the ovaries; he has obtained excellent results however in such cases from sweating procedures in addition to iron, keeping the patients in bed for three or four weeks. Even when all other measures had failed this treatment proved successful.

Virchows Archiv, Berlin

December, CCII, No. 3, pp. 321-474

136 Behavior of Plasma Cells and Vessels in Lymph Glands After Severing the Nerves. L. Martinotti.
137 Chronic Changes in Heart Valves. W. Dewitzky.
138 Case of Tuberous Sclerosis and Multiple Tumors in the Kidney. J. Kirpicznik.
139 Interstitial Connective-Tissue Cells in Testicle and Their Atrophy. (Zwischenzellen und Hodenatrophie.) K. Koch.
140 Giant Cells in Amyloid Organs. (Vorkommen von Riesenzellen in amyloiden Organen und die Beziehungen zwischen dem ischämischen Infarkt und der Amyloidose.) T. Tsunoda.
141 Origin of Chronic Inflammation. (Versuch einer Theorie der chronischen Entzündung auf Grund von Beobachtungen am Pankreas des lebenden Kaninchens und von histologischen Untersuchungen nach Unterbindung des Ausführungsganges.) M. Natus.
142 Red Blood Corpuscles in the Epidermis. H. Josephy.

Wiener klinische Wochenschrift, Vienna

January 12, XXIV, No. 2, pp. 43-82

143 *Obese Children. (Fettkinder.) R. Neurath.
144 Pulmonary Distomiasis. (Zur Kenntnis der Lungendistomumkrankheit.) Y. Tanaka.
145 *Causes and Treatment of Temporary Partial Amaurosis. (Flimmerskotom und seine Behandlung.) A. Pichler.
146 Circumscribed Chronic Peritonitis with Adhesions. W. Denk.
147 Differential Diagnosis of Hysteria and Allied Organic Nervous Disease. Z. Bychowski.
148 *Salvarsan in Syphilis. (Bemerkungen zur Ehrlich-Debatte.) E. Finger.

143. **Obese Children.**—Neurath discusses pathologic obesity in the young; it is characterized by the local preponderance of the accumulations of fat in the subcutaneous tissue and by the association with other physical anomalies. He describes a case in which a boy of 10 weighed 36.8 kg. (about 80 pounds) while only 109 cm. (43 inches) tall. The child measured 83 cm. (33 inches) around the waist and 53 cm. (21 inches) around the head, and complained of disturbances in vision in the evening, headache and dizziness. A course of thyroid treatment had a marked influence on the obesity. The facts observed in this case compared with others like it in the literature suggest, Neurath thinks, a tendency to hydrocephalus with compression of the hypophysis from the distention of the third ventricle interfering with the functioning of the hypophysis. The obesity seemed to have developed suddenly after scarlet fever three years before, and Goldstein has reported three cases which he explains as hypophysis obesity following a serious meningitis. Babonneix has also reported six cases of obesity in children; all were remarkably short, and in all the head was unusually large. The obesity in one had followed scarlet fever. Neurath has also reported another case in which hydrocephalus in a child caused symptoms suggesting a cerebellar tumor plus obesity. The symptoms finally subsided, confirming the assumption of hydrocephalus without a primary tumor, the distention of the third ventricle downward accounting for the symptoms observed. The obesity resulting from this cause is characterized especially by accumulations of fat in the abdomen, buttocks and chest, unusually short stature, and sometimes by symptoms of pressure on the cerebellum. In two other cases the obese children had epileptiform seizures; the syndrome was of the type described by Tandler as eunuchoid obesity, the result of a functional incapacity, hypoplasia of the interstitial tissue of the ovaries or testicles, the internal secretion regulating the secondary sexual characteristics and the course of ossification. The epileptiform convulsions suggested an organic affection of the brain apart from true epilepsy. Neither of the children had reached puberty.

145. **Transient Partial Blindness.**—Pichler suffers himself from recurring scintillating scotoma and his study of the subject shows that the attacks are not only analogous to migraine but are amenable to the same treatment and prophylactic measures. There seems in most cases to be a hereditary predisposition which is enhanced by any cause weakening the nervous system or inducing vasomotor disturbances. The partial blindness itself we seem to be unable to influence but the succeeding headache can be warded off or mitigated by sedatives. If the patient feels the slightest sign of an impending attack, immediate cessation of work, lying down for half an hour, and eating a light lunch will often dispel the attack. Pichler's attacks are generally preceded by a bright spark floating before his eyes; if he is able to drop work at once and lie down for half an hour there is no further trouble, but if he keeps at work the typical attack and headache follow. He found marked neurasthenia in thirty-nine of his fifty-three patients, and about the same number stated that the attacks came on after long-continued close eye-work. In treatment the main point is to discover the actual underlying cause in each case and by hygiene and suitable measures keep the vital functions in good order.

148. **Salvarsan.**—Professor Finger is chief of the clinic for skin diseases and syphilis at the university of Vienna, and he insists that salvarsan should not yet be placed in the hands of the general practitioner as it has not been sufficiently studied in respect to the technic of administration, dosage and indications, especially as he and others have observed injurious by-effects from the drug. It is immaterial, he continues, for the practitioner to know how these by-effects can be explained. It is not enough to assure him that the by-effects and fatalities are not yet positively known to be the work of the new drug. What he must be assured before the drug is offered for general use is that the untoward effects sometimes observed are certainly not the work of the drug which he is being urged to use. Besides, Finger adds, even Ehrlich himself admits that one of the fatalities recorded was the direct consequence of the administration of salvarsan. [The injurious by-effects to which Finger refers were mentioned in THE JOURNAL, January 7, page 83, in an abstract of his article on the subject.] He states that similar by-effects have been observed in a number of other cases since; the clinical picture is practically the same in all. He refrains from comment on principle in order not to bias his judgment of the drug which has certain undeniable advantages, wishing to regard even the by-effects from the optimistic rather than the pessimistic standpoint. He comments further on Igersheimer's conclusions that salvarsan cannot harm a healthy eye because it seems to cure syphilitic eye lesions; this assumption does not necessarily follow. The predilection for the drug may vary in the healthy and the diseased optic nerve. Igersheimer's further statement that large quantities of arsenic were refound in the animals' eyeballs in his experimental research, even although no appreciable harm resulted certainly suggests caution. The frequency of the occurrence of by-effects with salvarsan cannot be compared with those from mercury as each new day may bring new developments while the matter is practically settled for mercury. Finger also comments on Martius' statement that extensive necrosis at the point of the subcutaneous or intramuscular injection was observed in every one of the twelve cadavers he had opportunity to examine two or three weeks after injection of salvarsan. [Martius' communication was summarized in THE JOURNAL, February 4, page 388.] Finger also calls attention to the fact that a distinction must be made between the frequency of syphilis as a cause of eye disturbances and the frequency of eye disturbances in the course of syphilis. Syphilologists know of the eye disturbances only from the complaints of the patients, while the ophthalmologists discover disturbances which escape the notice of the attending physician.

Zeitschrift für Geburtshülfe und Gynäkologie, Stuttgart

LXVII, No. 3, pp. 603-799. Last indexed February 4, p. 389

149 Utilization of Anterior Wall of Cervix in Operation for Vesicovaginal Fistula. O. Küstner.
150 A Young Placenta Implanted on Uterine Isthmus and Cervix. R. T. Jaschke.
151 Retrogression of Lutein Cystomas After Hydatidiform Mole. E. Santi.
152 Pseudotumor in Small Pelvis from Contraction of Pyriform Muscle. (Seltenes Palpationsphänomen im kleinen Becken.) A. Mayer.
153 Rudimentary Solid Uterus Bipartitus with Solid Vagina. H. Küster.
154 *Tuberculosis of the Placenta. J. Novak and F. Ranzel.
155 *The Cicatrix After Cesarean Section in Respect to Later Pregnancies. (Die Uterusnarbe des korporealen und cervikalen Kaiserschnitts und ihre Chancen bei späteren Schwangerschaften und Geburten.) F. A. Scheffzek.
156 Eclampsia and the Wassermann Reaction. M. Semon.

154. **Tuberculosis of the Placenta.**—Novak and Ranzel report ten cases of tuberculous placenta; tubercle bacilli were found in the placenta in seven. They review the history of this subject and the conclusions that might be drawn from their and others' findings in regard to the marriage of tuberculous girls and sterilization of tuberculous married women.

155. **The Cicatrix After Cesarean Section.**—Scheffzek has had spontaneous rupture occur after Cesarean section at a previous pregnancy in two cases in his experience. In ten other cases labor in women who had had Cesarean section done in former years was abnormally prolonged; in one case labor lasted for sixty-eight hours. In five cases Cesarean section had to be done anew and in four women premature delivery was artificially induced but version and forceps were required to terminate it. His experience shows that the cicatrix of the extraperitoneal Cesarean section is far stronger than that of the classic technic. Section in the body of the uterus necessarily impairs the child-bearing faculty much more than the extraperitoneal technic. Even when there were suppuration and infiltration during the healing of the extraperitoneal section yet there was no fixation of the uterus or displacement from retraction of the cicatrix. The extraperitoneal technic has been applied in seventy-one cases to date and it is so much simpler, he thinks, than the classic technic that he regards it as applicable by the general practitioner even under primitive conditions. He has frequently operated in this way without an operating table, in a room hastily arranged for the purpose, and obtained the same favorable results as in a well-equipped clinic.

Zentralblatt für Chirurgie, Leipsic

January 14, XXXVIII, No. 2, pp. 33-72

157 *Ligation of Veins for Suppurative Portal Thrombosis. (Venenunterbindung bei eitriger Pfortaderthrombose nach Appendicitis.) O. Sprengel.
158 *Glycerin to Relax the Bladder. O. Franck.
159 Operative Treatment of Stenosis. F. A. Kehrer.

157. **Ligation of Veins in Suppurative Thrombosis of the Portal Vein.**—THE JOURNAL, Aug. 28, 1909, page 753, mentioned the successful outcome of ligation of the mesenteric veins in a case of portal thrombosis following appendicitis. Sprengel recently encountered a case of the kind and applied the same measure in treatment. His patient was a man, aged 29, with a first attack of appendicitis with perforation. Sprengel recently encountered a case of the kind and applied two days after the operation had been first proposed and found then that the ascending colon had no well-developed mesentery and that the retroparietal peritoneum was exceptionally fat. These facts may have been responsible for the failure in this case. The ligation did not fully answer its purpose and the pylephlebitis continued its fatal course, involving even the finest ramifications of the portal vein. A single case of failure is not decisive, however, but Wilms' successful case is still the only one on record.

158. **Glycerin as a "Laxative" for the Bladder.**—Franck has had scarcely a single failure since he has made a practice of injecting from 15 to 20 c.c. of a 2 per cent. boric acid-glycerin into the bladder without attempting to draw the urine. He injects it without a catheter, with force enough to send it past the sphincter at the outlet of the bladder. About 10 c.c. escapes from the urethra but enough gets into the bladder to answer the desired purpose, stimulating the "peristalsis" of the organ so that spontaneous evacuation of urine follows in twenty minutes at most. This is now his routine practice after all abdominal operations and he has found it useful also in paralysis of the bladder from mechanical and nervous causes. Even strictures and enlargement of the prostate are transiently favorably influenced by this liquid catheter, as he calls it.

Zentralblatt für Gynäkologie, Leipsic

January 14, XXXV, No. 2, pp. 49-96

160 *Extradural Injections for Pain in Sacral Region. (Epidurale Injektion bei Kreuzschmerzen.) H. Albrecht.
161 Mammary Origin of Eclampsia Toxin. E. Martin and E. Santi.
162 Anatomic Mammary Insufficiency. (Zur Frage der anatomisch begründeten Stillunfahigkeit.) R. T. Jaschke.
163 Sudden Death During Delivery. E. Venus.

160. **Epidural Injections for Sacral Pains.**—Albrecht has applied Cathelin's technic in fifty-three cases of severe pains in the sacral region without appreciable disease in the genital organs. The result was the complete cure of the pain in 72 per cent. while the benefit was brief or no benefit was observed in 28 per cent. His experience shows that the procedure is particularly useful in treatment of functional bladder disturbances, in idiopathic pruritus vulvæ and for coccygodynia. He injected from 30 to 40 c.c. of physiologic salt solution, with or without local anesthesia. In two out of three cases of enuresis a cure was obtained by a single injection, as also in nine out of sixteen cases of severe functional neuroses without pathologic findings in the abdominal organs or genitalia. Most of these patients had long been under treatment in the hospital without appreciable benefit. In a case of exophthalmic goiter with pain in the lumbar and sciatic regions, the pain subsided for three days and then returned but disappeared permanently after a second injection with no recurrence during the five months to date. In another case a complete cure was realized by this means after failure of systematic and repeated courses of other measures for relief of intense sacral pain and idiopathic pruritus in a woman with premature menopause. [The technic was described in THE JOURNAL, July 13, 1901, page 150.] Equally favorable results were obtained in eleven out of thirteen cases of severe sacral pain persisting after apparent cure of old chronic inflammation of the uterine appendages. He thinks it possible that the sacral pain in these cases was a morbid pain-habit and that this habit was broken up by the single injection. Some of these patients had been in the hospital for from six to fifteen weeks under a course of treatment to promote absorption of the products of inflammation.

Zentralblatt für innere Medizin, Leipsic

January 14, XXXII, No. 2, pp. 33-64

164 Behavior of Purin Bodies in a Case of Cirrhosis of the Liver Before and After the Talma Operation. E. Axisa.

Gazzetta degli Ospedali e delle Cliniche, Milan

January 8, XXXII, No. 4, pp. 33-48

165 Antitoxic Action of Tuberculous Effusions. (Studi sugli essudati tubercolari umani considerati in rapporto alla immunita.) S. Livierato and E. Crossonini.

January 12, No. 6, pp. 59-66

166 General Anesthesia with Aid of Scopolamin. R. Caminiti.

Policlinico, Rome

January 8, XVIII, No. 2, pp. 37-68

167 Salvarsan in Syphilis. (Il preparato di Ehrlich-Hata nella cura della sifilide.) M. Truffi.

January 15, No. 3, pp. 69-100

168 *The Scapula-Angle Sign of Tuberculous Pulmonary Lesions. C. A. Crispolti.

168. **The Scapula-Angle Sign of Tuberculous Pulmonary Lesions.**—Crispolti states that the "acromion symptom" to which O. Kuthy has recently called attention is nothing but Baccelli's scapula-angle sign which has long been taught in Italy as an important indication of a disease process in the lungs causing the wall of the chest on that side to lag behind the other in the excursions of respiration. Baccelli found that this difference in the excursions was most marked at the superior angle of the scapula, at the inner extremity of its upper border, and that this difference was apparent even when the lesion was in an incipient stage. Kuthy devoted his attention to the movements of the acromion, and calls it the acromion symptom. He found it pronounced in 99.3 per cent. of 356 tuberculous patients examined, and in the eighty-five cases in which the trouble was bilateral, the sign was pronounced on the side most involved.

Ugeskrift for Læger, Copenhagen

January 12, LXXIII, No. 2, pp. 35-70

169 General Anesthesia with Scopolamin, Morphin and Ether. R. Hastrup. Commenced in No. 1.

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

DISEASES OF THE JOINTS AND SPINE. By Howard Marsh, M.A., M.C., Cantab., F.R.C.S., Master of Downing College and Professor of Surgery in the University of Cambridge. New and Enlarged Edition Thoroughly Revised by the Author and by C. Gordon Watson, F.R.C.S., Surgeon to the Metropolitan Hospital. Price, $3. Cloth. Pp. 632, with 100 illustrations. Chicago: Chicago Medical Book Co., 1910.

SERUM AND VACCINE THERAPY. Bacterial Therapeutics and Prophylaxis Bacterial Diagnostic Agents. By R. Tanner Hewlett, M.D., F.R.C.P., D.P.H., Professor of General Pathology and Bacteriology, King's College, London. Second Edition. Cloth. Price, 7 shillings 6 pence net. Pp. 406. London: J. & A. Churchill, 7 Great Marlborough Street, 1910.

ABHANDLUNGEN ÜBER SALVARSAN (EHRLICH-HATA-PRÄPARAT 606 GEGEN SYPHILIS). Gesammelt und mit einem Vorwort und Schlussbemerkungen herausgegeben von Dr. Paul Ehrlich, Geh. Obermed.-Rat, a. o. Professor, Direktor des Instituts für experimentelle Therapie, Frankfurt a. M. Paper. Price, 6 marks. Pp. 402. Munich: J. F. Lehmann's Verlag, 1911.

DIE HEILUNG DER GICHTISCH-RHEUMATISCHEN ERKRANKUNGEN GEMÄSS DER ERFOLGREICHST BEWÄHRTEN METHODE. Von Dr. M. J. Kittel, Spezialarzt für gichtisch-rheumatische (orthopädische) und für innere Frauenbehandlung in Franzensbad. Von J. F. Kleine. Paper. Pp. 128. Berlin: Kleine & Stapf, W. 15, Kurfürstendamm 35, 1911.

HOWARD TAYLOR RICKETTS Y SUS TRABAJOS SOBRE EL TABARDILLO (TIFO DE MEXICO). Publicado por la Secretaria de Instruccion Publica y Bellas Artes en cumplimiento del acuerdo relativo del Presidente de la Republica. Paper. Pp. 137. Mexico City, Mexico, 1910.

NATIONAL ASSOCIATION FOR THE STUDY AND PREVENTION OF TUBERCULOSIS. Transactions of the Sixth Annual Meeting, Washington, D. C., May 2-3, 1910. Paper. Pp. 440. Secretary, Dr. Henry B. Jacobs, 11 Mt. Vernon Place, West, Baltimore, Md.

FESTSCHRIFT ZUR VIERZIGJÄHRIGEN STIFTUNGSFEIER DES DEUTSCHEN HOSPITALS. Herausgegeben von dem Medical Board im Auftrage der Aerzte des Deutschen Hospitals und Dispensary in der Stadt New York, 1909. Paper. Pp. 598.

VIERZIG JAHRE DES DEUTSCHEN HOSPITALS UND DISPENSARY IN DER STADT NEW YORK. Eine geschichtliche Darstellung. Paper. Pp. 119, with illustrations.